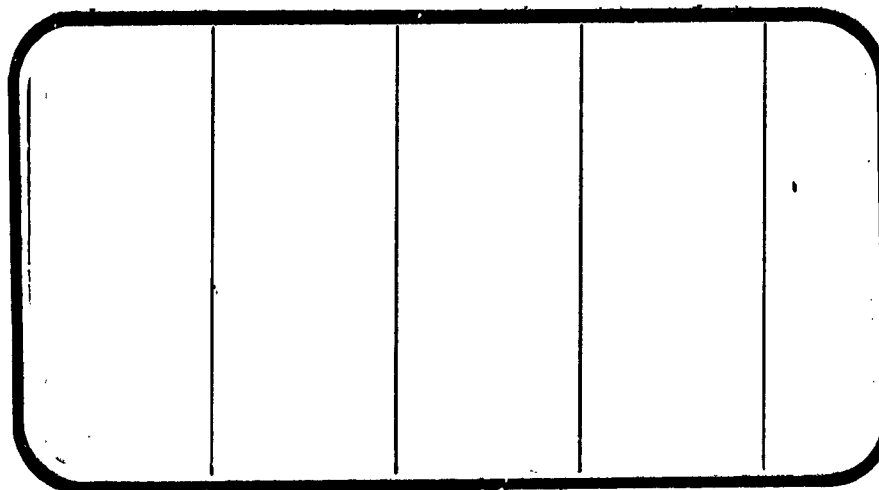




# NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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(NASA-CR-144622) TERMINAL AREA ENERGY  
MANAGEMENT REGIME INVESTIGATIONS UTILIZING  
AN 1/31-SCALE MODEL (47-1) OF THE SPACE  
SHUTTLE VEHICLE ORBITER CONFIGURATION  
140A/B/C/D IN THE AMES RESEARCH CENTER 11 X G3/.2

N76-29165

HC 18.75

Unclass  
49186

SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT

JOHNSON SPACE CENTER

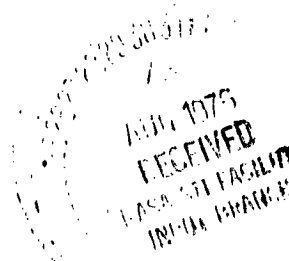
HOUSTON, TEXAS

DATA Management services

SPACE DIVISION



CHRYSLER  
CORPORATION



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VOLUME 4 OF 13

TERMINAL AREA ENERGY MANAGEMENT  
REGIME INVESTIGATIONS UTILIZING AN 0.030-SCALE  
MODEL (47-0) OF THE SPACE SHUTTLE VEHICLE  
ORBITER CONFIGURATION 140A/B/C/R IN THE  
AMES RESEARCH CENTER 11 X 11 FOOT  
TRANSONIC WIND TUNNEL (0A148)

by

P. J. Hawthorne  
Rockwell International Space Division

Prepared under NASA Contract Number NAS9-13247

by

Data Management Services  
Chrysler Corporation Space Division  
New Orleans, La. 70189

for

Engineering Analysis Division  
Johnson Space Center  
National Aeronautics and Space Administration  
Houston, Texas

WIND TUNNEL TEST SPECIFICS:

Test Number: ARC 11-073  
NASA Series Number: OA148  
Model Number: 47-0  
Test Dates: May 5 through May 17, 1975  
Occupancy Hours: 220

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Chrysler Corporation Space Division assumes no responsibility for the data presented other than display characteristics.

TERMINAL AREA ENERGY MANAGEMENT  
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ABSTRACT

This report documents data obtained in wind tunnel test 0A148.

The objectives of the test series were to:

- 1) obtain pressure distributions, forces and moments over the vehicle  
Orbiter in the terminal area energy management (TAEM) and approach phases  
of flight.
- 2) obtain elevon and rudder hinge moments in the TAEM and approach  
phases of flight.
- 3) obtain body flap and elevon loads for verification of loads  
balancing with integrated pressure distributions.
- 4) obtain pressure distributions near the short OMS pods in the high  
subsonic, transonic and low supersonic Mach number regimes.

Testing was conducted over a Mach number range from 0.6 to 1.4 with  
Reynolds number variations from  $4.57 \times 10^6$  to  $2.74 \times 10^6$  per foot. Model  
angle-of-attack was varied from -4 to 16 degrees and angles of side slip  
ranged from -8 to 8 degrees.

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7	ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES	ALPHA, MACH PHI, BETA	D	763-864
8	ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES	ALPHA, MACH PHI, BETA	D	865-966
9	LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES	ALPHA, MACH 2Y/BW, BETA	E	967-1051
10	LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES	ALPHA, MACH 2Y/BW, BETA	E	1052-1136
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12	LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES	ALPHA, MACH 2Y/BW, BETA	E	1222-1306
13	VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES	ALPHA, MACH Z/BV, BETA	F	1307-1374

# INDEX OF DATA FIGURES (Concluded)

FIGURE NUMBER	TITLE	CONDITIONS VARYING	PLOTTED COEFFICIENTS SCHEDULE	PAGES
14	VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES	ALPHA, MACH Z/BV, BETA	F	1375-1442

## PLOTTED COEFFICIENTS SCHEDULE:

- A)  $C_Y$ ,  $C_{Y'}$  and  $C_{BL}$  versus BETA
- B)  $C'_x$ ,  $C_A$  and  $CLM$  versus ALPHA
- C)  $C_{HEO}$ ,  $C_{HEI}$ ,  $C_{HETOT}$  and  $CHBF$  versus ALPHA
- D)  $C_p$  versus  $X/LB$
- E)  $C_p$  versus  $X/CW$
- F)  $C_p$  versus  $X/CV$

# NOMENCLATURE

<u>Symbol</u>	<u>Plot Symbol</u>	<u>Definition</u>
$A_b$	AB	total Orbiter base area, $ft^2$
$A_i$	AI	area over which $P_i$ acts, $ft^2$
$A_{sb}$	ASB	speed brake base area, $ft^2$
$b$	BREF, BW	Orbiter wing span, in
$b_v$	BV	vertical tail reference span, in
$C_{A_u}$	CAU	Orbiter uncorrected axial force coefficient
$C_A$	CA	Orbiter axial force coefficient with sting cavity adjusted to average base pressure
$C_{AF}$	CAF	Orbiter forebody axial force coefficient.
$C_{Asc}$	CASC	Orbiter sting cavity axial force coefficient.
$C_{D_u}$	CDU	Orbiter uncorrected drag coefficient
$C_{h_{bf}}$	CHBF	body flap hinge moment coefficient, about hinge line $X_0 = 1532.0$
$C_{h_{ei}}$	CHEI	inner elevon hinge moment coefficient, about hinge line $X_0 = 1387.0$
$C_{h_{eo}}$	CHEO	outer elevon hinge moment coefficient, about hinge line $X_0 = 1337.0$
$C_{h_{eTOT}}$	CHETOT	total right elevon hinge moment coefficient
$C_{L_u}$	CLU	Orbiter uncorrected lift coefficient
$C_\ell$	CBL	Orbiter rolling moment coefficient, body axis system

# NOMENCLATURE (Continued)

Symbol	Plot Symbol	Definition
$C_m$	CLM	Orbiter pitching moment coefficient with sting cavity adjusted to average base pressure, referenced to Orbiter MRC.
$C_{m_u}$	CLMU	Orbiter uncorrected pitching moment coefficient
$C_{m_F}$	CLMF	Orbiter forebody pitching moment coefficient referenced to orbiter MRC.
$C_{m_{sc}}$	CLMSC	Orbiter sting cavity pitching moment coefficient, referenced to Orbiter MRC
$C_{N_u}$	CNU	Orbiter uncorrected normal force coefficient
$C_N$	CN	Orbiter normal force coefficient with sting cavity adjusted to average base pressure
$C_{N_F}$	CNF	Orbiter forebody normal force coefficient
$C_{N_{sc}}$	CNSC	Orbiter sting cavity normal force coefficient
$C_n$	CYN	Orbiter yawing moment coefficient, body axis system
$C_{p_i}$	CPi	surface tap pressure coefficient, port i, $(P_i - P_\infty)/q$
$C_y$	CY	Orbiter side force coefficient
$C_{[X][Y]}$	$C[X][Y]$	base area force and moment coefficients. The first subscript (post fix) designates the type of coefficient, the second the pressure tap and it's associated area. The symbolic vectors [X] and [Y] are defined below.
[X]=		
A	A	axial force
N	N	normal force
Y	Y	side force
m	LM	pitching moment
n	YN	yawing moment
e	BL	rolling moment

# NOMENCLATURE (Continued)

Symbol	Plot Symbol	Definition
	[Y] <sup>n</sup>	
1,2,3 4,5,6 sc bf	1,2,3 4,5,6 SC BF	areas associated with pressure taps 1 through 6 see figure 2b sting cavity area upper body flap area
l <sub>b</sub>	LB	Orbiter reference body length, IML nose to X <sub>0</sub> = 1528.3, in.
ℓ <sub>REF</sub>	LREF	longitudinal reference length, Orbiter mean aerodynamic chord, in
	LU/DU	uncorrected lift to drag ratio, CLU/CDU
M	MACH	freestream Mach number
φ	PHI	angular cylindrical coordinate position around Orbiter body - deg.
P <sub>i</sub>	Pi	pressure at surface tap i, PSF
P <sub>∞</sub>	P	freestream static pressure, PSF
P <sub>t</sub>	PT	freestream total pressure, PSF
q	Q	freestream dynamic pressure, PSF
	RN/L	unit Reynolds number, million per foot
S	SREF	wing reference area, ft <sup>2</sup>
T <sub>t</sub>	TTR	freestream total temperature, °R
X <sub>cp</sub>	XCP/L	center of pressure location referred to l <sub>b</sub>
X <sub>0</sub> /L <sub>0</sub>	X/LB	longitudinal location of body surface, fraction of body length

# NOMENCLATURE (Concluded)

Symbol	Plot Symbol	Definition
$x/c$	X/CW	chordwise location on wing surface, fraction of local chord
$x/c_v$	X/CV	chordwise location on vertical tail, fraction of local chord
$n_v$	Z/BV	spanwise location on vertical tail, fraction of vertical tail span
$n$	2Y/BW	spanwise location on wing, fraction of semi span
$x_{mrp}$	XMRP	longitudinal location of moment reference point
$x_T$	XT	longitudinal moment transfer distance from Orbiter balance center to Orbiter MRC, in
$y_{mrp}$	YMRP	lateral location of moment reference point
$z_T$	ZT	vertical moment transfer distance from Orbiter balance center to Orbiter MRC, in
$\alpha$	ALPHA	angle of attack, degrees
$\beta$	BETA	angle of sideslip, degrees
$\delta_{bf}$	BDFLAP	body flap deflection, degrees
$\delta_{eL}$	ELVN-L, L-ELVN	left elevon deflection, degrees
$\delta_{eR}$	ELVN-R, R-ELVN	right elevon deflection, degrees
$\delta_r$	RUDDER	rudder deflection, degrees
$\delta_{sb}$	SPDBRK	speed brake deflection, degrees
$z_{mrp}$	ZMRP	vertical location of moment reference point
	\$\$	mask character used to indicate all possible values for this test 01 through 85

# REMARKS

During the course of the test it was necessary to replumb the scani-  
valves. The resultant time loss necessitated deleting the priority 4 runs  
which incorporated the use of the metric vertical tail.

Data obtained from pressure taps 184, 296 and 347 are suspect due to  
slow leaks noticed while leak checking individual model pressure taps.

Body flap hinge moment data for datasets RE8001 through RE8005 have  
a -15% drift while datasets RE8006 and RE8007 have a +10% drift due to data  
recording system errors. System checks during remainder of the test  
indicate a system error of less than 4% for body flap hinge moment data.

Rolling moment data has an approximate -.003 bias in the coefficient.  
The reason for this was not determined, but possible sources are fabrication  
tolerances and/or differential stiffness of the left and right elevon  
panels.

Distortion of the instrumented elevon shaft appears to have occurred  
around run 310 due to model assembly difficulties and the maximum loads en-  
countered at these test conditions. A comparison of measured elevon de-  
flexion before and after the test with the nominal setting is presented  
below:

<u>Elevon Panel</u>	<u>Nominal</u>	<u>Pre-Test</u>	<u>Post-Test</u>
Inboard right	-10	-9° 36'	-8° 55'
	-4	-3° 34'	-2° 55'
	0	+0° 10'	+1° 02'
	4	+4° 26'	+4° 28'
	10	+10° 32'	+10° 39'
Outboard right	-10	-9° 36'	-8° 15'
	-4	-3° 34'	-2° 20'
	0	+0° 10'	+1° 05'
	4	+4° 26'	+3° 59'
	10	+10° 32'	+10° 18'

\* Inboard only was measured but was the same as outboard panel (see Ref 2)

## CONFIGURATION INVESTIGATED

The Rockwell International model 47-0 Space Shuttle Orbiter Vehicle was utilized in this test series. The model was originally constructed to -140A/B lines, but was modified prior to this test with the addition of the -140C OMS pods, six inch bevelled interpanel elevon gaps and uncovered RCS forward thruster parts. To denote these additions, the additional designations "C" (for -140C OMS pods) and "R" (for RCS thrusters) were added, and the slashes deleted for convenience on Table II (designated "-140 ABCR").

In data sets RE8069 to 085 the RCS thruster ports in the nose were filled reverting the configuration to -140A/B/C modified with body B<sub>26</sub>.

The following nomenclature denotes the model components:

<u>Component</u>	<u>Description</u>
B <sub>26</sub>	140A/B fuselage (VL70-000140A, VL70000140B)
B <sub>70</sub>	140A/B fuselage (VL70-000140A, VL70-000145, VL70-000140B, VL70-000143A, VL70-000139) with RCS thruster parts (VL70-08501, VL70-08502, VL70-08296)
C <sub>9</sub>	140A/B basic canopy (VL70-000140A, VL70-000143A)
E <sub>44</sub>	140A/B elevons (VL70-000200, VL70-006089, VL70-006092) with six inch bevelled interpanel gaps, no flipper door
F <sub>9</sub>	140A/B body flap (VL70-000140B, VL70-000200)
M <sub>16</sub>	OMS-RCS pods for 140C Orbiter
N <sub>28</sub>	OMS basic nozzles
R <sub>5</sub>	basic Orbiter rudder (VL70-000146A, VL70-000095)
V <sub>8</sub>	basic Orbiter vertical tail (VL70-000140A, VL70-000146A)
W <sub>116</sub>	basic 140A/B wing (VL70-000140B, VL70-000200)

# CONFIGURATIONS INVESTIGATED (Concluded)

Designated configurations are:

-140ABCR = B<sub>70</sub> C<sub>9</sub> E<sub>44</sub> F<sub>9</sub> M<sub>16</sub> N<sub>28</sub> R<sub>5</sub> V<sub>8</sub> W<sub>116</sub>

-140 ABC = B<sub>26</sub> C<sub>9</sub> E<sub>44</sub> F<sub>9</sub> M<sub>16</sub> N<sub>28</sub> R<sub>5</sub> V<sub>8</sub> W<sub>116</sub>

## TEST FACILITY DESCRIPTION

The Ames Research Center Unitary Plan 11- by 11-Foot Transonic Wind Tunnel is a closed-circuit, air-medium, variable-density facility capable of attaining Mach numbers from 0.6 to 1.4 at Reynolds numbers from  $1.7 \times 10^6/\text{ft}$  to  $9.4 \times 10^6/\text{ft}$ . The test section is 22 feet long, and models are installed on internal strain-gauge balances mounted to sting-type support systems.

Shadowgraph and Schlieren photographic equipment is available, and pressure transducer instrumentation is provided.

Tunnel operating temperature is 580°R. Extended high Reynolds number runs are restricted by power availability.

## DATA REDUCTION

Standard NASA/Ames data reduction equations were used to reduce forces, moments, and pressures to coefficient form. Orbiter main balance force and moment coefficients were computed using the following equations:

<u>Symbol</u>	<u>Orbiter main balance measurement</u>
NF	Normal Force
AF	Axial Force
PM	Pitching Moment
YM	Yawing Moment
SF	Side Force
RM	Rolling Moment

$$C_{A_u} = AF / (q S)$$

$$C_{L_u} = C_{N_u} \cos \alpha - C_{A_u} \sin \alpha$$

$$C_{N_u} = NF / (q S)$$

$$C_{D_u} = C_{N_u} \sin \alpha + C_{A_u} \cos \alpha$$

$$C_Y = SF / (q S)$$

$$C_{m_u} = \frac{PM}{q S c} + \frac{C_A \cdot Z_T}{c} - \frac{C_N \cdot X_T}{c}$$

$$C_{\ell} = \frac{RM}{q S b} + \frac{C_Y \cdot Z_T}{b}$$

### Moment Transfer Distances

$$X_T = 0.572 \text{ in.}$$

$$Y_T = 0$$

$$Z_T = 0.450 \text{ in.}$$

$$C_n = \frac{YM}{q S b} - \frac{C_Y \cdot X_T}{b}$$

The Moment Reference Center about which the data was reduced is located at

### Orbiter (Full Scale)

$X_O$	1076.68
$Y_O$	0
$Z_O$	375.00

Balance coefficients were grouped into datasets RE80\$\$.

## DATA REDUCTION (Continued)

Hinge moments and hinge moment coefficients were computed using the following equations:

Elevon hinge moments (inboard and outboard).

$$HM_{eI} = (HM1-HM2) (M1/D1) + HM1$$

$$HM_{eo} = (HM3-HM4) (M3/D3) + HM3$$

where

$HM_i$  = measured moment on strain gage  $i$

$D1$  = distance between gages 1 and 2, .49335 in.

$D3$  = distance between gages 3 and 4, .45800 in.

$M1$  = moment transfer distance for inboard elevon, .93825 in.

$M3$  = moment transfer distance for outboard elevon, .92250 in.

Elevon hinge moment coefficients

$$\text{Inboard, } C_{HeI} = HM_{eI} / (q S_e c_e)$$

$$\text{Outboard, } C_{Heo} = HM_{eo} / (q S_e c_e)$$

$$\text{Total, } C_{HeTOT} = C_{HeI} + C_{Heo}$$

$S_e$  = elevon reference area, 0.189 ft.<sup>2</sup>

$c_e$  = elevon reference MAC, 2.721 in.

Body flap hinge moment coefficient

$$C_{Hbf} = HM_{bf} / (q S_{bf} b_f)$$

$HM_{bf}$  = measured body flap hinge moment

$S_{bf}$  = body flap reference area, 0.12834 ft.<sup>2</sup>

## DATA REDUCTION (Continued)

$c_{bf}$  = body flap reference MAC, 2.541 in.

Hinge moment coefficients are part of datasets RE8X\$\$.

Pressure coefficients for all model orifice pressure measurements were computed using this equation:

$$C_{p_i} = (P_i - P_\infty)/q$$

where  $P_i$  = pressure at model orifice  $i$

$P_\infty$  = tunnel static pressure

$q$  = tunnel dynamic pressure

Other data reduction constants include:

$S$  = wing reference area, 2.4210 ft.<sup>2</sup>

$c$  = wing reference chord, 14.2443 in.

$b$  = wing reference span, 28.1004 in.

After the data had been reduced to coefficient form by NASA/AMES, DMS interpolated it to nominal  $\alpha$ 's and  $\beta$ 's. Then 2 types of base and sting cavity area coefficients were calculated. When they are applied 3 types of balance coefficient data exists. These can be distinguished by the last subscript (symbolic name) or postfix (mnemonic name). The key is given below

U ~ uncorrected coefficients.

~ coefficients with sting cavity pressure corrected to base pressure (without a suffix).

F ~ forebody coefficients with the base area pressure corrected to freestream pressure.

### DATA REDUCTION (Continued)

Only the correction coefficients associated with base pressure tapes 1 through 4 were applied to the longitudinal orbiter coefficients.

Figure 2b illustrates the base area associated with each pressure tap. Alphabetic characters bf and sc designate body flap and sting cavity areas, respectively. Base area coefficient names have a numeric character which designates the pressure tap number. Base coefficients for vertical tail areas 5 and 6 were calculated but not applied to the total orbiter coefficients. Base area coefficient values are tabulated in the appendix. A detailed derivation of these coefficients follows. It is concluded by a matrix of base area geometric properties.

The orbiter sting cavity force and moment coefficients were computed as:

$$C_{A_{sc}} = \frac{(C_{p2} - C_{p1}) A_1}{S}$$

$$C_{N_{sc}} = \frac{(C_{p2} - C_{p1}) A_1 \tan 12.55^\circ}{S}$$

$$C_{m_{sc}} = C_{A_{sc}} \frac{Z_t}{c} - C_{N_{sc}} \frac{x_{sc}}{c}$$

The orbiter force and moment coefficients corrected for the difference between balance cavity pressure and orbiter base pressure:

$$C_A = C_{A_u} - C_{A_{sc}}$$

$$C_N = C_{N_u} - C_{N_{sc}}$$

$$C_m = C_{m_u} - C_{m_{sc}}$$

These orbiter coefficients are part of datasets KE80\$\$.

# DATA REDUCTION (Continued)

Orbiter base force and moment coefficients were calculated as follows:

Upper base area

$$C_{N2u} = -(C_{p2} A_{2u} \tan 16^\circ)/S$$

$$C_{A2u} = -(C_{p2} A_{2u})/S$$

$$C_{m2u} = C_{A2u} \frac{Z_{2u}}{c} - C_{N2u} \frac{X_{2u}}{c}$$

Lower base area

$$C_{N2l} = -(C_{p2} A_{2l} \tan 10^\circ)/S$$

$$C_{A2l} = -(C_{p2} A_{2l})/S$$

$$C_{m2l} = C_{A2l} \frac{Z_{2l}}{c} - C_{N2l} \frac{X_{2l}}{c}$$

Total base area,  $A_2$

$$C_{N2} = C_{N2u} + C_{N2l}$$

$$C_{A2} = C_{A2u} + C_{A2l}$$

$$C_{m2} = C_{m2u} + C_{m2l}$$

OMS pod base area,  $A_3$

(This assumes the surface is perpendicular to the orbiter X-axis)

$$C_{A3} = -(C_{p3} A_3)/S$$

$$C_{m3} = C_{A3} \frac{Z_3}{c}$$

OMS pod base area,  $A_4$

(This assumes the surface is perpendicular to the orbiter X axis)

# DATA REDUCTION (Continued)

$$C_{A4} = -(C_{p4} A_4)/S$$

$$C_{m4} = C_{A4} \frac{Z_4}{c}$$

Coefficients for the above areas are grouped into datasets EF8D\$\$.

Upper surface of body flap

$$C_{A_{bf}} = \frac{-C_{p_{bf}} A_{bf}}{S} \sin(\delta_{bf} + 6.88^\circ)$$

$$C_{N_{bf}} = \frac{-C_{p_{bf}} A_{bf}}{S} \cos(\delta_{bf} + 6.88^\circ)$$

$$C_{m_{bf}} = \frac{C_{A_{bf}} Z_{bf}}{c} - \frac{C_{N_{bf}} X_{bf}}{c}$$

where:

$$C_{p_{bf}} = \frac{C_{p200} + C_{p201} + C_{p204} + C_{p205}}{4}$$

The orbiter force and moment coefficients adjusted to free stream pressure (forebody coefficients).

$$C_{A_F} = C_{A_u} - \left( \frac{-C_{p1} A_1}{S} + \sum_{i=2}^4 C_{A_i} + C_{A_{bf}} \right)$$

$$C_{N_F} = C_{N_u} - (C_{N2} + C_{N_{bf}})$$

$$C_{m_F} = C_{m_u} - \left( \sum_{i=2}^4 C_{m_i} + C_{m_{bf}} \right)$$

These orbiter coefficients are part of datasets KF80\$\$.

Vertical tail "undercarriage" area,  $A_5$

Top Segment:

$$C_{N5t} = (C_{pb} A_{5t} \tan 63.75^\circ)/S$$

# DATA REDUCTION (Continued)

$$C_{A5t} = - (C_{p5} A_{5t})/S$$

$$C_{m5t} = C_{A5t} \frac{Z_{5t}}{c} - C_{N5t} \frac{X_{5t}}{c}$$

Middle Segment:

$$C_{N5m} = (C_{p5} A_{5m} \tan 26.1426^\circ)/S$$

$$C_{A5m} = - (C_{p5} A_{5m})/S$$

$$C_{m5m} = C_{A5m} \frac{Z_{5m}}{c} - C_{N5m} \frac{X_{5m}}{c}$$

Bottom Segment:

$$C_{N5b} = (C_{p5} A_{5b} \tan 21.94^\circ)/S$$

$$C_{A5b} = - (C_{p5} A_{5b})/S$$

$$C_{m5b} = C_{A5b} \frac{Z_{5b}}{c} - C_{N5b} \frac{X_{5b}}{c}$$

Total area,  $A_5$ :

$$C_{N5} = C_{N5t} + C_{N5m} + C_{N5b}$$

$$C_{A5} = C_{A5t} + C_{A5m} + C_{A5b}$$

$$C_{m5} = C_{m5t} + C_{m5m} + C_{m5b}$$

Vertical Tail base area,  $A_6$ :

Segment above rudder

$$C_{N6u} = (C_{p6} A_{6u} \tan 63.75^\circ)/S$$

$$C_{A6u} = (C_{p6} A_{6u})/S$$

$$C_{m6u} = C_{A6u} \frac{Z_{6u}}{c} - C_{N6u} \frac{X_{6u}}{c}$$

# DATA REDUCTION (Continued)

Rudder/Speed brake base:

$$C_{A6\ell} = C_{p6} A_{6\ell} [\sin (0-55.1667^\circ) \cos 55.1667^\circ + \cos (0-55.1667^\circ) \sin 55.1667^\circ \cos (\delta r)]/S$$

$$C_{N6\ell} = C_{p6} A_{6\ell} [\sin (0-55.1667^\circ) \sin 55.1667^\circ - \cos (0-55.1667^\circ) \cos 55.1667^\circ \cos (\delta r)]/S$$

$$C_{Y6\ell} = C_{p6} A_{6\ell} \cos (0-55.1667^\circ) \sin \delta r/S$$

$$C_{m6\ell} = [C_{A6\ell} (Z_{6\ell}) - C_{N6\ell} (X_{6\ell})]/c$$

$$C_{x6\ell} = [C_{Y6\ell} (Z_{6\ell})]/b$$

$$C_{n6\ell} = -[C_{Y6\ell} (X_{6\ell})]/b$$

$$\theta = \tan^{-1} \left[ \frac{5.456791 + .573209 \cos \left( \frac{\delta_{SB}}{2} \right)}{3.797715 - .823715 \cos \left( \frac{\delta_{SB}}{2} \right)} \right]$$

$$A_{6\ell} = A_{6u} / \sin \theta$$

Total area,  $A_6$ :

$$C_{A6} = C_{A6u} + C_{A6\ell}$$

$$C_{N6} = C_{N6u} + C_{N6\ell}$$

$$C_{Y6} = C_{Y6\ell}$$

$$C_{m6} = C_{m6u} + C_{m6\ell}$$

$$C_{x6} = C_{x6\ell}$$

$$C_{n6} = C_{n6\ell}$$

Vertical tail area coefficient data are grouped into datasets GE8D\$\$.

DATA REDUCTION (Continued)

BASE GEOMETRIC PROPERTIES MATRIX

Description	Sub-script	Area A - ft. <sup>2</sup>	Distance between Centroid and WRC	
			vertical Z - in.	longitudinal X - in.
Sting cavity	sc	0.076699	0.45	12.199
Body flap upper surface	bf	0.128	- 2.64	13.659
Orbiter balance cavity	1	0.076699	0.45	12.199
Orbiter base orifice 2 lower	2l	0.133889	- 1.32	12.617
Orbiter base orifice 2 upper	2u	0.0818055	2.07	12.384
Lower OMS pod	3	0.030472	2.68	NA
Upper OMS pod	4	0.074166	3.63	NA
Vertical tail "undercarriage" bottom	5b	0.003565	4.612	12.395
Vertical tail "undercarriage" middle	5m	0.002610	5.336	14.079
Vertical tail "undercarriage" top	5t	0.000341	5.97	15.165
Vertical tail above rudder	6u	0.000798	12.656	18.482
Base area of speed brake	6l	Varies with speed brake deflection		

NOTES: Sting cavity and Orbiter balance cavity are synonymous.

NA - not applicable.

# DATA REDUCTION (Continued)

$\delta_{sb}$	$\Delta G_v \text{ ft}^2$
0	0.0066036
25	0.0456000
35	0.0621000
55	0.0950800
85	0.1551400

$$X_{6\ell} = 15.045 + 1.442277 [1 - \cos (\delta_{sb}/2)]$$

$$Z_{6\ell} = 9.755 + 0.501827 [1 - \cos (\delta_{sb}/2)]$$

Standard DMS loads cycle test procedures were used to process the 0A148 pressure data. First numerous pressure distribution plots were released. Analysis of these produced bad pressure data list. This list is reproduced below:

# DATA REDUCTION (Continued)

## OA148 Bad Pressure Data

Component	Dataset No.	Tap No.	$\beta$	$\alpha$
Fuselage (B)	1	143	4	-4
	1	148	4	-4
	1	150	4	-4
	1	152	4	-4
	1	186	4	-4
	1	187	4	-4
	1	189	4	-4
	1	191	4	-4
	1	193	4	-4
Lower Wing (L)	1 → 7	231	ALL	ALL
	1 → 85	290	ALL	ALL
	1	316	4	-4
	1	317	4	-4
	1	337	4	-4
	1	338	4	-4
	1	358	4	-4
	1	378	4	-4
	1	379	4	-4
Upper Wing (U)	1 → 7	247	ALL	ALL
	1	357	4	-4
Body Flap (F)	24	205	-4	12
Speed Brake (K)	1 → 85	822	ALL	ALL
Vertical Tail (V)	8	443	ALL	ALL
	ALL	1444	ALL	ALL
	79	1453	-4	-4
	79	1454	-4	-4

Note: Wind tunnel pressure data tabulated in the appendix have the original bad data values.

## DATA REDUCTION (Continued)

These points were eliminated from further processing. The remaining data were interpolated to nominal alpha and beta values. Processing was completed with the release of a magnetic tape containing the final interpolated pressure coefficients.

This report contains plots and tabular listings for both force and pressure data. Plotted force data illustrates lateral-directional, longitudinal and hinge moment characteristics of the configuration tested. Plotted pressure data illustrates the effect of several control deflections and attitude changes on local pressure distributions. The multiple volume appendix contains a tabulated listing of the basic force and pressure data. Listing of the interpolated base area coefficients is also included. The plotted and tabulated data are arranged in the following manner:

VOLUME NO.	CONTENTS
1	Force data plots showing lateral-directional longitudinal and hinge moment characteristics.
2	Plots illustrating the effect of control surface deflections on fuselage, wing and vertical tail pressure distributions.

# DATA REDUCTION (Concluded)

VOLUME  
NO.

## CONTENTS

3

### Tabulated Force Data

<u>Dataset</u>	<u>Data type</u>
RE80\$\$	source balance coefficients
RE8X\$\$	source hinge moment coefficients
RE8Y\$\$	source base pressure coefficients
KE80\$\$	interpolated balance coefficients adjusted for cavity pressure and forebody coefficients
EE8D\$\$ FE8D\$\$	interpolated base and cavity area coefficients
GE8D\$\$	interpolated vertical tail base area coefficients

### Tabulated Pressure Data

	<u>Component</u>	<u>Fourth Character*</u>	<u>Page</u>
4, 5	orbiter fuselage	B	1
6,7,8	lower wing	L	1271
9,10,11	upper wing	U	3147
12	upper body flap	F	5405
12	lower body flap	G	5774
13	speed brake	K	6143
13	vertical tail	V	6547

\* The fourth character in each dataset identifier (i.e., XE8BXX, B for Fuselage) represents the individual component.

## REFERENCES

1. SD75-SH-0106, "Pretest Information for OA148 of the 0.03-Scale 47-0 Pressure Loads Space Shuttle Model in the 11 x 11 Foot Leg of the NASA/ARC Unitary Plan Wind Tunnel," April 18, 1975.
2. MG-75-07-11, Rockwell International Corporation Internal Letter: "Model design Dimensional Varification Task 36: Elevon Deflection Angle Check of the 0.03-Scale SSV Model 47-0 (140A/B Configuration)". SAS/WTO/75-283, July 29, 1975.

TABLE I

[illegible]

100-1003

TABLE II.

TEST: OA 148		DATA SET RUN NUMBER COLLATION NUMBER										DATE: Post Test	
DATA SET IDENTIFIER	TIME DURATION	X										MACH NUMBER	
		A	B	C	D	E	F	G	H	I	J		
2E8001	-140 A3CR	B	D	0	55	163	0	0	32	33	34	35	59
002		A	D						38	39	40	41	125
003		A	D						43	44	45	46	11
004		A	D						48	49	50	51	0.9
005		A	C						53	54	55	56	0.6
006	-140 A3CR	A	C	0	55	225	0	0	60	61	62	63	0.6
007		A	D						68	69	70	71	0.9
008	-140 A3CR	B	D	0	85	225	0	0	71	72	73	74	14
009		A	D						77	78	79	80	125
010		A	D						82	83	84	85	11
011		A	D						87	88	89	90	0.9
012		A	C						92	93	94	95	0.6

COEFFICIENTS

AX = -4, 0, 4, 8, 12  
 BX = -4, 0, 4, 8, 12, 16

CY = -8, -4, 0, 4, 8  
 DZ = -4, 0, 4

DATE: 10-10-60



TABLE II. - Continued.

TEST: 0A 48		DATA SET RUN NUMBER COLLATION SUMMARY										DATE: Post Test			
DATE- TIME	TEST LOCATION	$\alpha$										MACH NUMBERS			
		X	Y	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	S <sub>4</sub>	S <sub>5</sub>	S <sub>6</sub>	-A	C			4	5
2E8022	140 ABC12	B	D	-10	35	163	10	0	175	176	177	178	179	180	1.4
029		A	D						181	182	183	184	185		1.25
030		A	D						186	187	188	189	190		1.1
031		A	D						191	192	193	194	195		0.9
032		A	C						196	197	198	199	200		0.6
033	140 ABC12	B	D	+10	35	163	0	10	201	202	203	204	205	206	1.4
034		A	D						207	208	209	210	211		1.25
035		A	D						212	213	214	215	216		1.1
036		A	D						217	218	219	220	221		0.9
037		A	C						222	223	224	225	226		0.6
038	140 ABC12	B	D	+10	85	163	10	10	227	228	229	230	231	232	1.4
039		A	D						233	234	235	236	237		1.25
040		A	D						238	239	240	241	242		1.1
041		A	D						243	244	245	246	247		0.9
042		A	C						248	249	250	251	252		0.6
		COEFFICIENTS										SCHEDULES			
		13 19 25 31 37 43 49 55										TABLE 1 TABLE 2			



TABLE II. - Continued.

TEST: 5A-4B		DATA SET RUN NUMBER COLLATION SUMMARY										DATE: 11-1-55	
DATA SET IDENTIFIER	EXPLANATION												
		A	B	C	D	E	F	G	H	I	J	MACHINE NO.	
001	404202-2	1	1	1	1	1	1	1	1	1	1	9	
002		1	1	1	1	1	1	1	1	1	1	9	
003		1	1	1	1	1	1	1	1	1	1	9	
004		1	1	1	1	1	1	1	1	1	1	9	
005		1	1	1	1	1	1	1	1	1	1	9	
006	404202-2	1	1	1	1	1	1	1	1	1	1	9	
007		1	1	1	1	1	1	1	1	1	1	9	
008		1	1	1	1	1	1	1	1	1	1	9	
009		1	1	1	1	1	1	1	1	1	1	9	
010		1	1	1	1	1	1	1	1	1	1	9	
011		1	1	1	1	1	1	1	1	1	1	9	
012		1	1	1	1	1	1	1	1	1	1	9	
013		1	1	1	1	1	1	1	1	1	1	9	
014		1	1	1	1	1	1	1	1	1	1	9	
015		1	1	1	1	1	1	1	1	1	1	9	
016		1	1	1	1	1	1	1	1	1	1	9	
017		1	1	1	1	1	1	1	1	1	1	9	
018		1	1	1	1	1	1	1	1	1	1	9	
019		1	1	1	1	1	1	1	1	1	1	9	
020		1	1	1	1	1	1	1	1	1	1	9	
021		1	1	1	1	1	1	1	1	1	1	9	
022		1	1	1	1	1	1	1	1	1	1	9	
023		1	1	1	1	1	1	1	1	1	1	9	
024		1	1	1	1	1	1	1	1	1	1	9	
025		1	1	1	1	1	1	1	1	1	1	9	
026		1	1	1	1	1	1	1	1	1	1	9	
027		1	1	1	1	1	1	1	1	1	1	9	
028		1	1	1	1	1	1	1	1	1	1	9	
029		1	1	1	1	1	1	1	1	1	1	9	
030		1	1	1	1	1	1	1	1	1	1	9	
031		1	1	1	1	1	1	1	1	1	1	9	
032		1	1	1	1	1	1	1	1	1	1	9	
033		1	1	1	1	1	1	1	1	1	1	9	
034		1	1	1	1	1	1	1	1	1	1	9	
035		1	1	1	1	1	1	1	1	1	1	9	
036		1	1	1	1	1	1	1	1	1	1	9	
037		1	1	1	1	1	1	1	1	1	1	9	
038		1	1	1	1	1	1	1	1	1	1	9	
039		1	1	1	1	1	1	1	1	1	1	9	
040		1	1	1	1	1	1	1	1	1	1	9	
041		1	1	1	1	1	1	1	1	1	1	9	
042		1	1	1	1	1	1	1	1	1	1	9	
043		1	1	1	1	1	1	1	1	1	1	9	
044		1	1	1	1	1	1	1	1	1	1	9	
045		1	1	1	1	1	1	1	1	1	1	9	
046		1	1	1	1	1	1	1	1	1	1	9	
047		1	1	1	1	1	1	1	1	1	1	9	
048		1	1	1	1	1	1	1	1	1	1	9	
049		1	1	1	1	1	1	1	1	1	1	9	
050		1	1	1	1	1	1	1	1	1	1	9	
051		1	1	1	1	1	1	1	1	1	1	9	
052		1	1	1	1	1	1	1	1	1	1	9	
053		1	1	1	1	1	1	1	1	1	1	9	
054		1	1	1	1	1	1	1	1	1	1	9	
055		1	1	1	1	1	1	1	1	1	1	9	
056		1	1	1	1	1	1	1	1	1	1	9	
057		1	1	1	1	1	1	1	1	1	1	9	
058		1	1	1	1	1	1	1	1	1	1	9	
059		1	1	1	1	1	1	1	1	1	1	9	
060		1	1	1	1	1	1	1	1	1	1	9	
061		1	1	1	1	1	1	1	1	1	1	9	
062		1	1	1	1	1	1	1	1	1	1	9	
063		1	1	1	1	1	1	1	1	1	1	9	
064		1	1	1	1	1	1	1	1	1	1	9	
065		1	1	1	1	1	1	1	1	1	1	9	
066		1	1	1	1	1	1	1	1	1	1	9	
067		1	1	1	1	1	1	1	1	1	1	9	
068		1	1	1	1	1	1	1	1	1	1	9	
069		1	1	1	1	1	1	1	1	1	1	9	
070		1	1	1	1	1	1	1	1	1	1	9	
071		1	1	1	1	1	1	1	1	1	1	9	
072		1	1	1	1	1	1	1	1	1	1	9	
073		1	1	1	1	1	1	1	1	1	1	9	
074		1	1	1	1	1	1	1	1	1	1	9	
075		1	1	1	1	1	1	1	1	1	1	9	
076		1	1	1	1	1	1	1	1	1	1	9	
077		1	1	1	1	1	1	1	1	1	1	9	
078		1	1	1	1	1	1	1	1	1	1	9	
079		1	1	1	1	1	1	1	1	1	1	9	
080		1	1	1	1	1	1	1	1	1	1	9	
081		1	1	1	1	1	1	1	1	1	1	9	
082		1	1	1	1	1	1	1	1	1	1	9	
083		1	1	1	1	1	1	1	1	1	1	9	
084		1	1	1	1	1	1	1	1	1	1	9	
085		1	1	1	1	1	1	1	1	1	1	9	
086		1	1	1	1	1	1	1	1	1	1	9	
087		1	1	1	1	1	1	1	1	1	1	9	
088		1	1	1	1	1	1	1	1	1	1	9	
089		1	1	1	1	1	1	1	1	1	1	9	
090		1	1	1	1	1	1	1	1	1	1	9	
091		1	1	1	1	1	1	1	1	1	1	9	
092		1	1	1	1	1	1	1	1	1	1	9	
093		1	1	1	1	1	1	1	1	1	1	9	
094		1	1	1	1	1	1	1	1	1	1	9	
095		1	1	1	1	1	1	1	1	1	1	9	
096		1	1	1	1	1	1	1	1	1	1	9	
097		1	1	1	1	1	1	1	1	1	1	9	
098		1	1	1	1	1	1	1	1	1	1	9	
099		1	1	1	1	1	1	1	1	1	1	9	
100		1	1	1	1	1	1	1	1	1	1	9	

14-00000-1

TABLE II. - Concluded.

TEST: 2A 20

DATE: 2005-12-20

DATA SET RUN NUMBER COLLATION SUMMARY

TEST RUN NUMBER	X										MACH NUMBERS			
	1	2	3	4	5	6	7	8	9	10				
205501 - 20 ABC	B	D	-5	55	163	-10	-10	397	398	399	400	401	402	14
205502	A	D						403	404	405	406	407		125
205503	A	D						408	409	410	411	412		111
205504	A	D						413	414	415	416	417		39
205505	A	C						418	419	420	421	422		30
205506 - 20 ABC	B	D	-5	0	-117	+10	-10	423	424	425	426	427	428	14
205507	A	D						429	430	431	432	433		121
205508	A	D						434	435	436	437	438		111
205509	A	D						439	440	441	442	443		119
205510	A	C						444	445	446	447	448		30
205511 - 20 ABC	B	E	10	0	-117	+10	+10	449	450	451	452	453	454	14
205512	A	E						455	456	457	458	459		125
205513	A	E						460	461	462	463	464		111
205514	A	F						465	466	467	468	469		09
205515	A	O						470	471	472	473	474		30

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TABLE III  
MODEL DIMENSIONAL DATA

MODEL COMPONENT BODY - B<sub>26</sub>

GENERAL DESCRIPTION Configuration 140A/B orbiter fuselage

NOTE: B<sub>26</sub> is identical to B<sub>24</sub> except underside of fuselage has been  
refaired to accept W<sub>117</sub>.

MODEL SCALE: 0.030 MODEL DRAWING: SS-A00147, Reference J

DRAWING NUMBER: VI70-000143B, -000200, -000205, -006089, -000145,  
VI70-000140A, -000140B

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (OMI: Fwd Sta. X <sub>0</sub> -235), In.	1293.3	38.799
Length (IMI: Fwd Sta X -238), In.	1290.3	38.709
Max Width (@ X <sub>0</sub> = 1528.3), In.	264.0	7.920
Max Depth (@ X <sub>0</sub> = 1464), In.	250.0	7.500
Fineness Ratio	0.264	0.264
Area - Ft <sup>2</sup>		
Max. Cross-Sectional	340.88	0.3068
Planform		
Wetted		
Base		

TABLE III (Continued)

MODEL COMPONENT : BODY - B<sub>70</sub>

GENERAL DESCRIPTION : Configuration 140A/B orbiter fuselage with forward fuselage RCS thruster ports, otherwise B<sub>70</sub> is identical to B<sub>76</sub>.

MODEL SCALE: 0.030

DRAWING NUMBER : VI.70-000140A, -000140B, -000143B, -000145, -000200, VI.70-000205, -006089, -008501, -008502, -008296

DIMENSIONS :

	FULL SCALE	MODEL SCALE
Length (OMI: Fwd Sta X <sub>0</sub> =235), In.	1293.3	38.799
Length (IMI: Fwd Sta X <sub>0</sub> =238), In.	1290.3	38.709
Max Width (w X <sub>0</sub> = 1528.3), In.	264.0	7.920
Max Depth (w X <sub>0</sub> = 1464), In.	250.0	7.500
Fineness Ratio	0.264	0.264
Area - ft <sup>2</sup>		
Max. Cross-Sectional	340.88	0.3068
Planform		
Wetted		
Base		

TABLE III (Cont'd)

MODEL COMPONENT : CANOPY - C

GENERAL DESCRIPTION : Configuration 3A. Canopy used with finelage

Fig. 1

MODEL SCALE: 0.030

MODEL DWG: SS-A00147, Release 12

DRAWING NUMBER : VI-70-000143A

DIMENSIONS :

FULL SCALE

MODEL SCALE

Length ( $X_0 = 434.643$  to  $578$ ), In. 143.357 4.301

Max Width (@  $X_0 = 513.127$ ), In. 152.412 4.572

Max Depth (@  $X_0 = 485.0$ ), In. 25.00 0.750

Fineness Ratio

Area

Max. Cross-Sectional

Planform

Wetted

Base

TABLE III (Cont'd)

MODEL COMPONENT	ELEVON - E <sub>11</sub>
GENERAL DESCRIPTION	6.0 In. F.S. cast machined into E <sub>11</sub> elevon. Flipper doors centerbody piece, and tipscats are not simulated. (Data are for one of two sides.)
MODEL SCALE:	0.030
DRAWING NUMBER	

## DIMENSIONS

	FULL SCALE	MODEL SCALE
Area - ft <sup>2</sup>	210.0	0.189
Span (equivalent) , In.	349.2	10.476
Inb'd equivalent chord, In.	118.0	3.54
Outb'd equivalent chord , In.	55.19	1.656
Ratio movable surface chord total surface chord		
At Inb'd equiv. chord	0.2096	0.2096
At Outb'd equiv. chord	0.4004	0.4004
Sweep Back Angles, degrees		
Leading Edge	0.00	0.00
Trailing Edge	- 10.056	- 10.056
Hingeline	0.0	0.0
(Product of Area & $\bar{c}$ ) <sub>3</sub>	1587.25	0.0429
Area Moment (Nacodoc 1000)		
Mean Aerodynamic Chord, In.	90.7	2.721

TABLE III (Cont'd)

MODEL COMPONENT : BODY FLAP - P<sub>9</sub>

GENERAL DESCRIPTION : Configuration 140A/B

MODEL SCALE: 0.030

DRAWING NUMBER : VL70-000140B, -000200

DIMENSIONS :

	FULL SCALE	MODEL SCALE
Length (Chord), In.	<u>84.7</u>	<u>2.541</u>
Max Width , In.	<u>262.308</u>	<u>7.869</u>
Max Depth , In.	<u>23.00</u>	<u>0.690</u>
Fineness Ratio	<u></u>	<u></u>
Area - Ft <sup>2</sup>	<u></u>	<u></u>
Max. Cross-Sectional	<u></u>	<u></u>
Planform	<u>142.60</u>	<u>0.128</u>
Wetted	<u></u>	<u></u>
Base	<u>41.90</u>	<u>0.0377</u>

TABLE III (Cont'd)

MODEL COMPONENT : OMS POD - M<sub>14</sub>

GENERAL DESCRIPTION : Configuration 1400 orbiter OMS pod - short pod.  
External contour is to referenced drawings with 1/2" added to simulate  
TPS.

MODEL SCALE: 0.015

DRAWING NUMBER : VI.70-008401, -008410

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (OMS Fwd Sta $X_0 = 1310.5$ ), In.	<u>258.50</u>	<u>7.755</u>
Max Width (@ $X_0 = 1511$ ), In.	<u>136.8</u>	<u>4.104</u>
Max Depth (@ $X_0 = 1511$ ), In.	<u>74.70</u>	<u>2.241</u>
Fineness Ratio	<u>2.484</u>	<u>2.484</u>
Area - Ft <sup>2</sup>	<u></u>	<u></u>
Max. Cross-Sectional	<u>58.865</u>	<u>0.053</u>
Planform	<u></u>	<u></u>
Wetted	<u></u>	<u></u>
Base	<u></u>	<u></u>

TABLE III (Cont'd)

MODEL COMPONENT: ~~NOZZLE~~ OMS NOZZLES - N<sub>28</sub>

GENERAL DESCRIPTION: Configuration 140A/B orbiter OMS nozzles.

MODEL SCALE: 0.030

DRAWING NUMBER: VI/70-000140A (Location), SS-A00106, Release 9 (Contour)

DIMENSIONS:		FULL SCALE	MODEL SCALE
MACH NO.			
Length - In.			
Gimbal Point to Exit Plane			
Throat to Exit Plane			
Diameter - In.			
Exit			
Throat			
Inlet			
Area - ft <sup>2</sup>			
Exit			
Throat			
Gimbal Point (Station) - In.			
Left	Nozzle		
	X <sub>0</sub>	1518.0	45.54
	Y <sub>0</sub>	88.0	2.64
	Z <sub>0</sub>	492.	14.76
Right	Nozzles		
	X <sub>0</sub>	1518.0	45.54
	Y <sub>0</sub>	88.0	2.64
	Z <sub>0</sub>	492.0	14.76
Null Position - Deg.			
Left	Nozzle		
	Pitch	15°49'	15°49'
	Yaw	12°17'	12°17'
Right	Nozzle		
	Pitch	15°49'	15°49'
	Yaw	12°17'	12°17'

TABLE III (Cont'd)

MODEL COMPONENT	<u>RUDDER - R<sub>c</sub></u>
GENERAL DESCRIPTION	<u>Configuration 1400 orbiter rudder (identical to configuration 140A/R rudder).</u>
MODEL SCALE:	<u>0.030</u>
DRAWING NUMBER	<u>VI.70-000146R, -000095</u>

DIMENSIONS	FULL SCALE	MODEL SCALE
Area - Ft <sup>2</sup>	<u>100.15</u>	<u>0.090</u>
Span (equivalent), In.	<u>201.00</u>	<u>6.030</u>
Inb'd equivalent chord, In.	<u>91.585</u>	<u>2.748</u>
Outb'd equivalent chord, In.	<u>50.833</u>	<u>1.525</u>
Ratio movable surface chord/ total surface chord	<u>          </u>	<u>          </u>
At Inb'd equiv. chord	<u>0.400</u>	<u>0.400</u>
At Outb'd equiv. chord	<u>0.400</u>	<u>0.400</u>
Sweep Back Angles, degrees	<u>          </u>	<u>          </u>
Leading Edge	<u>34.83</u>	<u>34.83</u>
Trailing Edge	<u>26.25</u>	<u>26.25</u>
Hingeline	<u>34.83</u>	<u>34.83</u>
(Product of area & $\bar{c}$ )	<u>          </u>	<u>          </u>
Area Moment (Hinged) <del>(Hinged)</del> , Ft <sup>3</sup>	<u>610.92</u>	<u>0.0165</u>
Mean Aerodynamic Chord, In.	<u>73.2</u>	<u>2.196</u>

TABLE III (Cont'd)

MODEL COMPONENT: VERTICAL - V<sub>g</sub>GENERAL DESCRIPTION: Configuration 140C orbiter vertical tail.(Identical to configuration 140A/B vertical tail.)MODEL SCALE: 0.030DRAWING NUMBER: VI70-000140C, -000146BDIMENSIONS: FULL SCALE MODEL SCALE

## TOTAL DATA

Area (Theo) - Ft <sup>2</sup>		
Planform	<u>413.253</u>	<u>0.372</u>
Span (Theo) - In.	<u>315.72</u>	<u>9.472</u>
Aspect Ratio	<u>1.675</u>	<u>1.675</u>
Rate of Taper	<u>0.507</u>	<u>0.507</u>
Taper Ratio	<u>0.404</u>	<u>0.404</u>
Sweep-Back Angles, Degrees.		
Leading Edge	<u>45.000</u>	<u>45.000</u>
Trailing Edge	<u>26.25</u>	<u>26.25</u>
0.25 Element Line	<u>41.13</u>	<u>41.13</u>
Chords:		
Root (Theo) WP	<u>268.50</u>	<u>8.055</u>
Tip (Theo) WP	<u>108.47</u>	<u>3.254</u>
MAC	<u>199.81</u>	<u>5.994</u>
Fus. Sta. of .25 MAC	<u>1463.35</u>	<u>43.901</u>
W.P. of .25 MAC	<u>635.52</u>	<u>19.066</u>
B.L. of .25 MAC	<u>0.0</u>	<u>0.0</u>
Airfoil Section		
Leading Wedge Angle - Deg.	<u>10.0</u>	<u>10.0</u>
Trailing Wedge Angle - Deg.	<u>14.92</u>	<u>14.92</u>
Leading Edge Radius	<u>2.0</u>	<u>0.060</u>
Void Area	<u>13.17</u>	<u>0.0019</u>
Blanketed Area	<u>0.0</u>	<u>0.0</u>

TABLE III (Cont'd)

MODEL COMPONENT: WING-W<sub>16</sub>GENERAL DESCRIPTION: Configuration 4NOTE: Identical to W<sub>11</sub>, except airfoil thickness. Dihedral angle is along  
trailing edge of wing.MODEL SCALE: 0.030

TEST NO.

DWG. NO. VL70-000140A, -000200DIMENSIONS:FULL-SCALEMODEL SCALETOTAL DATAArea (Theo.)  $\text{Ft}^2$ 

Planform

2690.00

2.421

Span (Theo) In.

936.68

28.10

Aspect Ratio

2.265

2.265

Rate of Taper

1.177

1.177

Taper Ratio

0.200

0.200

Dihedral Angle, degrees

3.500

3.500

Incidence Angle, degrees

0.500

0.500

Aerodynamic Twist, degrees

Sweep Back Angles, degrees

Leading Edge

45.000

45.000

Trailing Edge

- 10.056

- 10.056

0.25 Element Line

35.209

35.209

## Chords:

Root (Theo) B.P.O.O.

689.24

20.677

Tip, (Theo) B.P.

137.85

4.136

MAC

474.81

14.244

Fus. Sta. of .25 MAC

1136.83

34.105

W.P. of .25 MAC

290.58

8.717

B.L. of .25 MAC

182.13

5.464

EXPOSED DATAArea (Theo)  $\text{Ft}^2$ 

1751.50

1.576

Span, (Theo) In. BP108

720.68

21.620

Aspect Ratio

2.059

2.059

Taper Ratio

0.245

0.245

## Chords

Root BP108

562.09

16.863

Tip 1.00  $\frac{b}{2}$ 

137.85

4.136

MAC

392.83

11.785

Fus. Sta. of .25 MAC

1185.98

35.579

W.P. of .25 MAC

295.30

8.829

B.L. of .25 MAC

251.77

7.555

Airfoil Section (Rockwell Mod NASA)  
XXXX-64Root  $\frac{b}{2}$  =

0.113

0.113

Tip  $\frac{b}{2}$  =

0.120

0.120

Data for (1) of (2) Sides

Leading Edge Cuff

Planform Area  $\text{Ft}^2$ 

113.18

0.102

Leading Edge Intersects Fus M. L. @ Sta

582.0

15.0

Leading Edge Intersects Wing @ Sta

1025.0

30.720

TABLE IV.

## FUSELAGE PRESSURE TAP LOCATIONS -

ORBITER - IN.		$\Phi$ RADIAL LOCATION ~ DEGREES																					
Full Model	X <sub>0</sub> /L <sub>0</sub>	0	20	40	55	70	90	105	110	120	135	140	150	151	156	162	165	169	174	180	185	188	193
235	705	0	7																				
245	735	008	8				9																
265	795	023	11	12	13	14	15	16		17			18										
295	785	046		24	25	26	27	28		29			30										
325	775	070		36	37	38	39	40		41			42										
330	740	112	47	48	49	50	51	52		53			54										
440	320	153																	57				
450	350	165	55	61	62	63	64	65		66			67					68					
465	395	177												73		74							
500	1500	204	75	76	77	78	79	80		81		82	83					84					
530	680	251	87	90			91	92		93			94					95					
625	1575	301	98	99			100	101		102			103					104					
725	2175	378	107	108			109	110		111			112					113					
880	2640	437	116	117			118	119		120			121					122					
980	2940	574	125	126																			
1080	3240	652	128	129						132			133					134					
1180	3540	729	137	138						141			142										

TABLE IV. - Concluded.

FUSELAGE PRESSURE TAP LOCATIONS

CENTER-IN.	$\bar{Q}$ RADIAL LOCATION - DEGREES																		
	0	20	40	55	70	90	105	110	120	135	140	150	151	158	162	165	165	174	180
Full Scale	16																		
1225	37.35	77.9	45		146	147	148	149		50	151	152				153		164	175
1300	39.0	82.1	52		157	158	159	160		61	162	163						164	175
1375	42.5	87.9	66		167	168	169	170		71	172	173				174		175	185
1430	42.9	92.1	76		177	178	179	180		81	182	183				184		185	195
1480	44.4	96.0	86		187	188	189	190		91	192	193				194		195	205
1530	45.9	99.9							96	197								198	209
									198	209									

TABLE V.

No.	Tap	LEFT WING PRESSURE TAP LOCATIONS												No. Taps	Total Taps
		1/2	3/8	1/4	3/16	1/8	3/32	1/16	3/64	1/32	3/128	1/64	3/256		
225/110	1/2	0	0.04	0.13	0.27	0.42	0.57	0.63	0.72	0.79					
	3/8	0.05	0.09	0.12	0.17	0.21	0.23	0.24	0.25	0.26				0	9
	1/8	0	0	0	0	0	0	0	0	0				0	
225/140	1/2	0	0.05	0.10	0.20	0.34	0.49	0.56	0.62	0.67			0.70	0.70	
	3/8	0	0.05	0.10	0.20	0.34	0.49	0.56	0.62	0.67			0.70	0.70	
	1/8	0	0	0	0	0	0	0	0	0			0.70	0.70	
300/170	1/2	0	0.10	0.20	0.40	0.63	0.86	0.93	0.95	0.95			0.97	0.97	
	3/8	0.05	0.10	0.20	0.40	0.63	0.86	0.93	0.95	0.95			0.97	0.97	
	1/8	0	0	0	0	0	0	0	0	0			0.97	0.97	
427/200	1/2	0	0.10	0.20	0.40	0.63	0.86	0.93	0.95	0.95			0.97	0.97	
	3/8	0.05	0.10	0.20	0.40	0.63	0.86	0.93	0.95	0.95			0.97	0.97	
	1/8	0	0	0	0	0	0	0	0	0			0.97	0.97	
534/250	1/2	0	0.10	0.20	0.40	0.63	0.86	0.93	0.95	0.95			0.97	0.97	
	3/8	0.05	0.10	0.20	0.40	0.63	0.86	0.93	0.95	0.95			0.97	0.97	
	1/8	0	0	0	0	0	0	0	0	0			0.97	0.97	

TABLE V. - Continued.

[illegible]

TABLE VI.

ORBITER VERTICAL TAIL  $\xi$  SPEED BRAKE  
PRESSURE TAP LOCATIONS

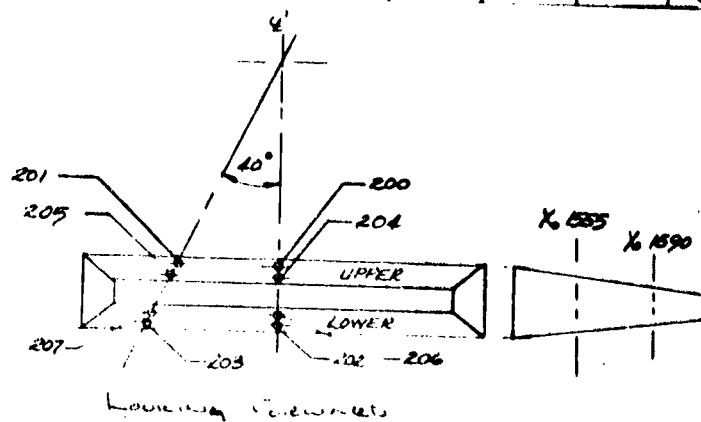
VERT. CAL (LH ONLY)		$x/c_v$									
$R_0$ FULL SCALE	$R_0$ MODEL SCALE	$\eta_v$	C	0.25	.5	.75	.90	.92	.95	.975	$R_0$ FULL SCALE
550	16.5	.153	430	431	430	432	432	435	436	437	5
600	18.0	.216	435	435	435	441	442	442	444	445	5
645	19.35	.259									5
685	20.70	.300	440	440	440	447	451	452	453	454	5
720	21.6	.325									5
765	22.95	.340	450	457	457	459	460	461	462	463	5
792	23.76	.355	465	466	467	468	469	470	471	472	5

SPEED BRAKE (INSIDE)		X/C <sub>3V</sub>									
R <sub>0</sub> FULL SCALE	R <sub>0</sub> MODEL SCALE	η <sub>3V</sub>	.10	.25	.50	.65	.90	.95	.975	R <sub>0</sub> FULL SCALE	
600	18.0	.110	801	802	803	804	805	5	5	5	
630	18.9	.254	806	807	808	809	810	5	5	5	
666	19.8	.407	811	812	813	814	815	5	5	5	
690	20.7	.567	816	817	818	819	820	5	5	5	
720	21.6	.706	821	822	823	824	825	5	5	5	
750	22.5	.856	826	827	828	829	830	5	5	5	

TABLE VII.

BODYFLAP PRESSURE TAP LOCATIONS

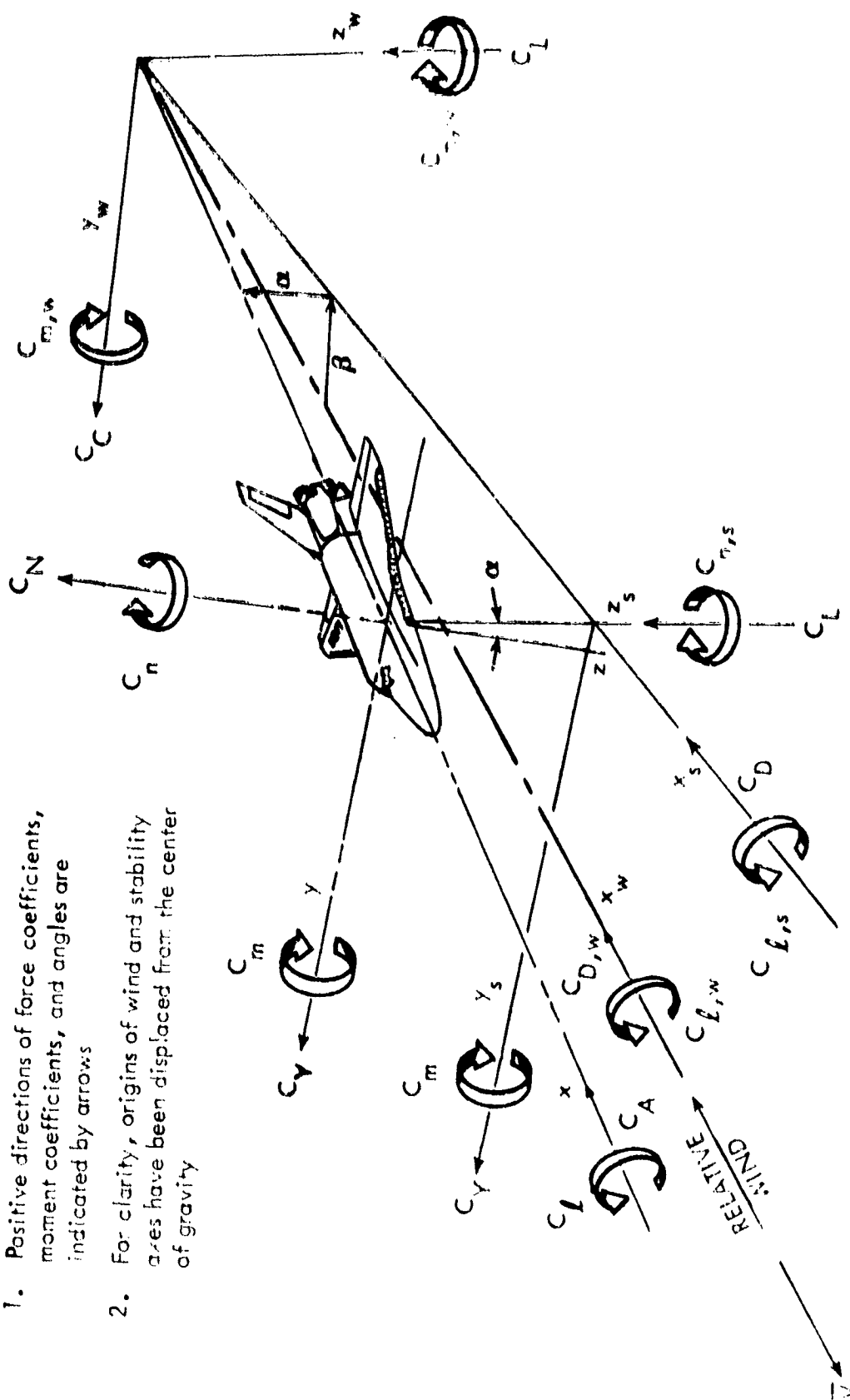
ORBITER - $X_0$			$\phi$ - DEGREES			
FULL SCALE	MODEL SCALE	$X_0/L_0$	0	40	No. TAPS	$\Sigma$ No. TAPS
15350	46.65	1.018	200	201	2	2
15500	46.65	1.018	202	203	2	4
15500	47.70	1.026	204	205	2	6
15500	47.70	1.046	206	207	2	8



Location of Taps

### Notes

1. Positive directions of force coefficients, moment coefficients, and angles are indicated by arrows.
2. For clarity, origins of wind and stability axes have been displaced from the center of gravity.

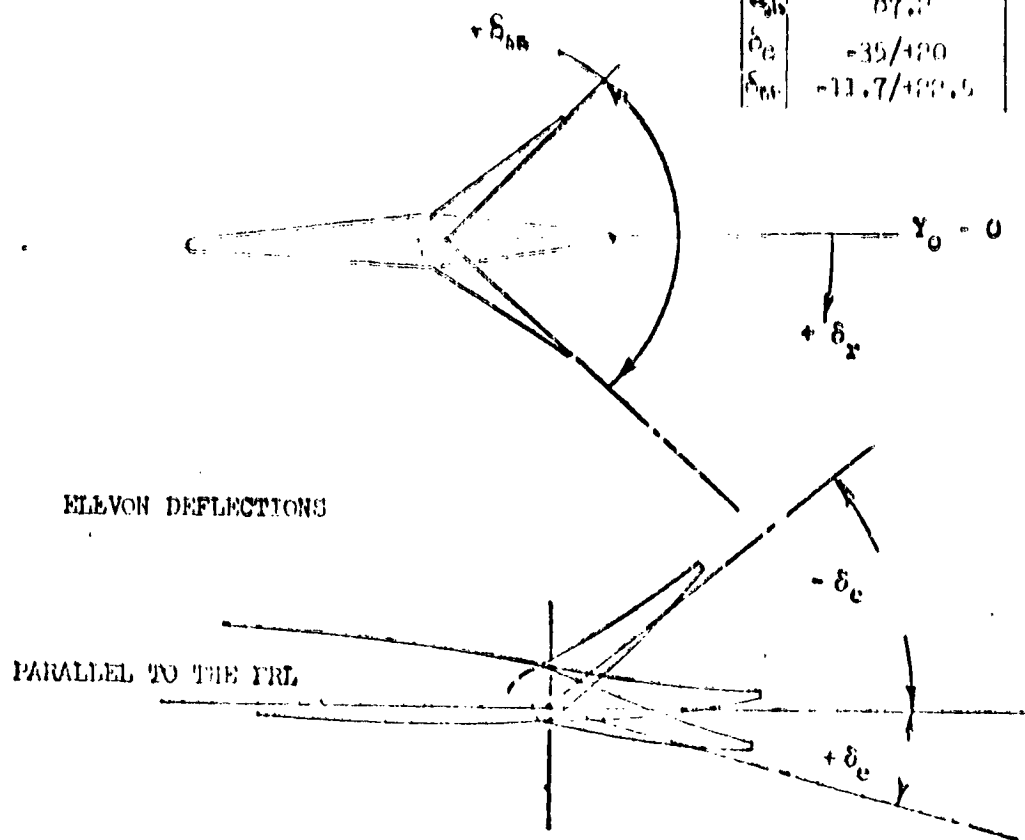


a. Orbiter Axis Systems

Figure 1. - Axis systems and sign conventions

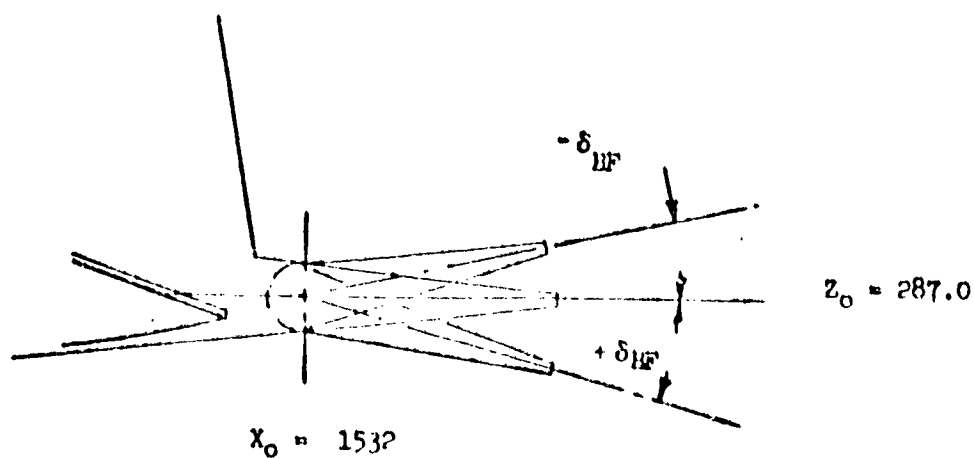
RUDDER AND SPEED BRAKE DEFLECTIONS  
(PARALLEL TO THE FRL)

	Maximum Deflections	
	Vehicle 1000000	Test CALS
$\delta_r$	22.8	$\pm 10$
$\delta_{sb}$	87.0	85
$\delta_e$	-35/420	$\pm 10$
$\delta_{eb}$	-11.7/422.5	-10.7 / +22.5



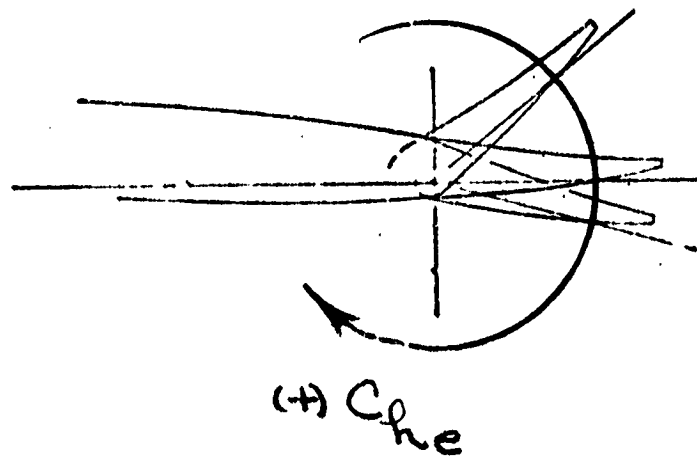
ELEVON DEFLECTIONS

BODY FLAP DEFLECTIONS



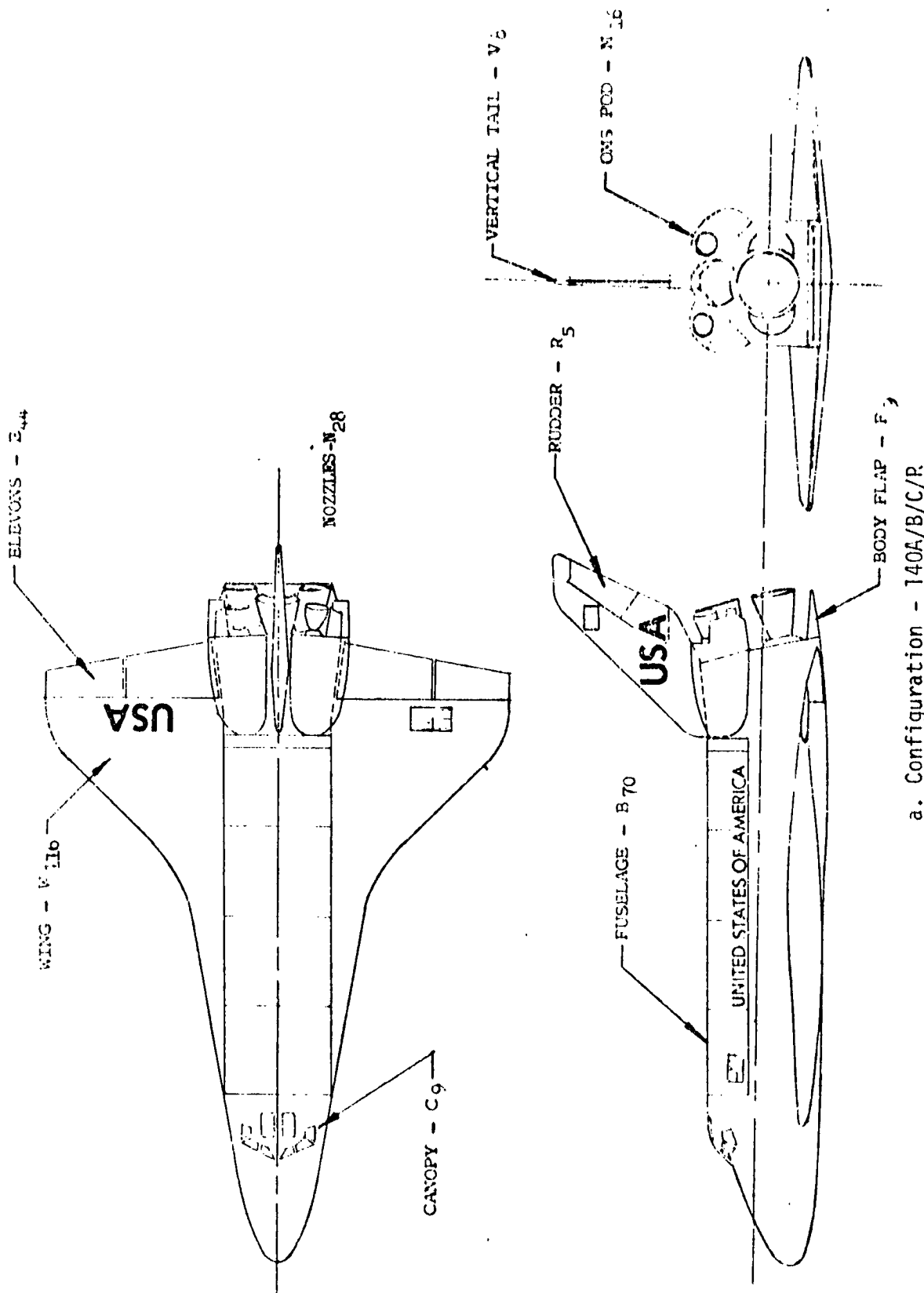
b. Definition of Angular Measurements

Figure 1. - Continued.



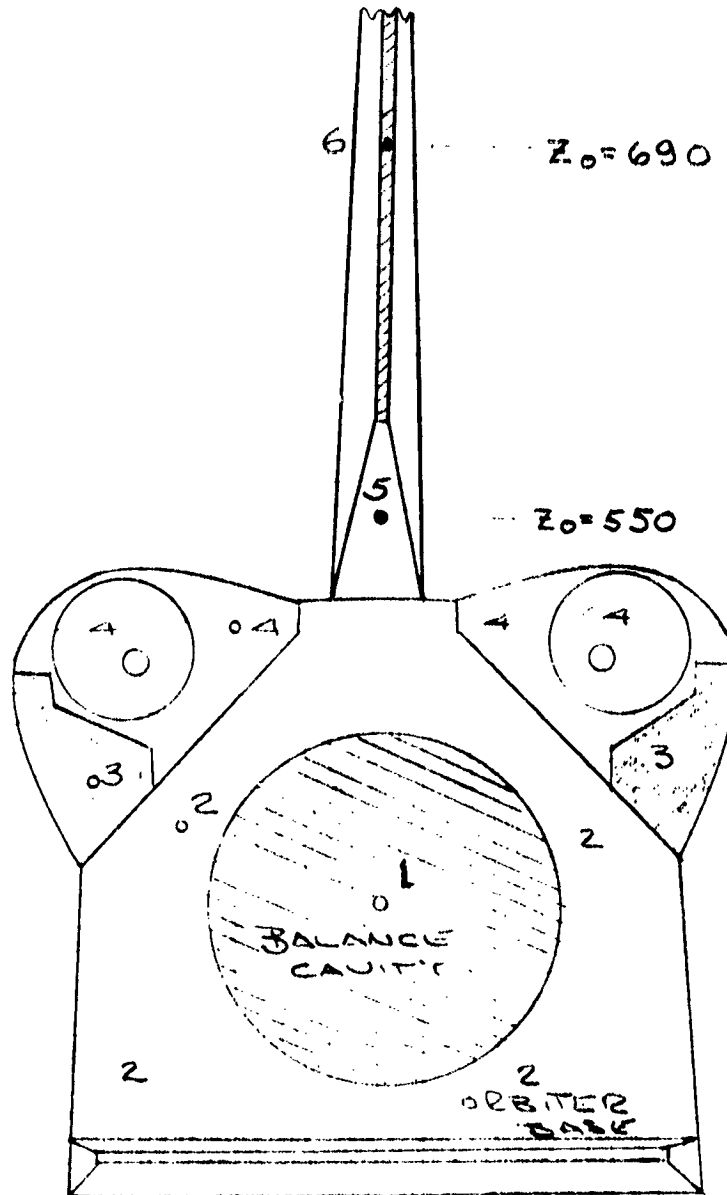
c. Elevon Hinge Moment Sign Convention

Figure 1. - Concluded.



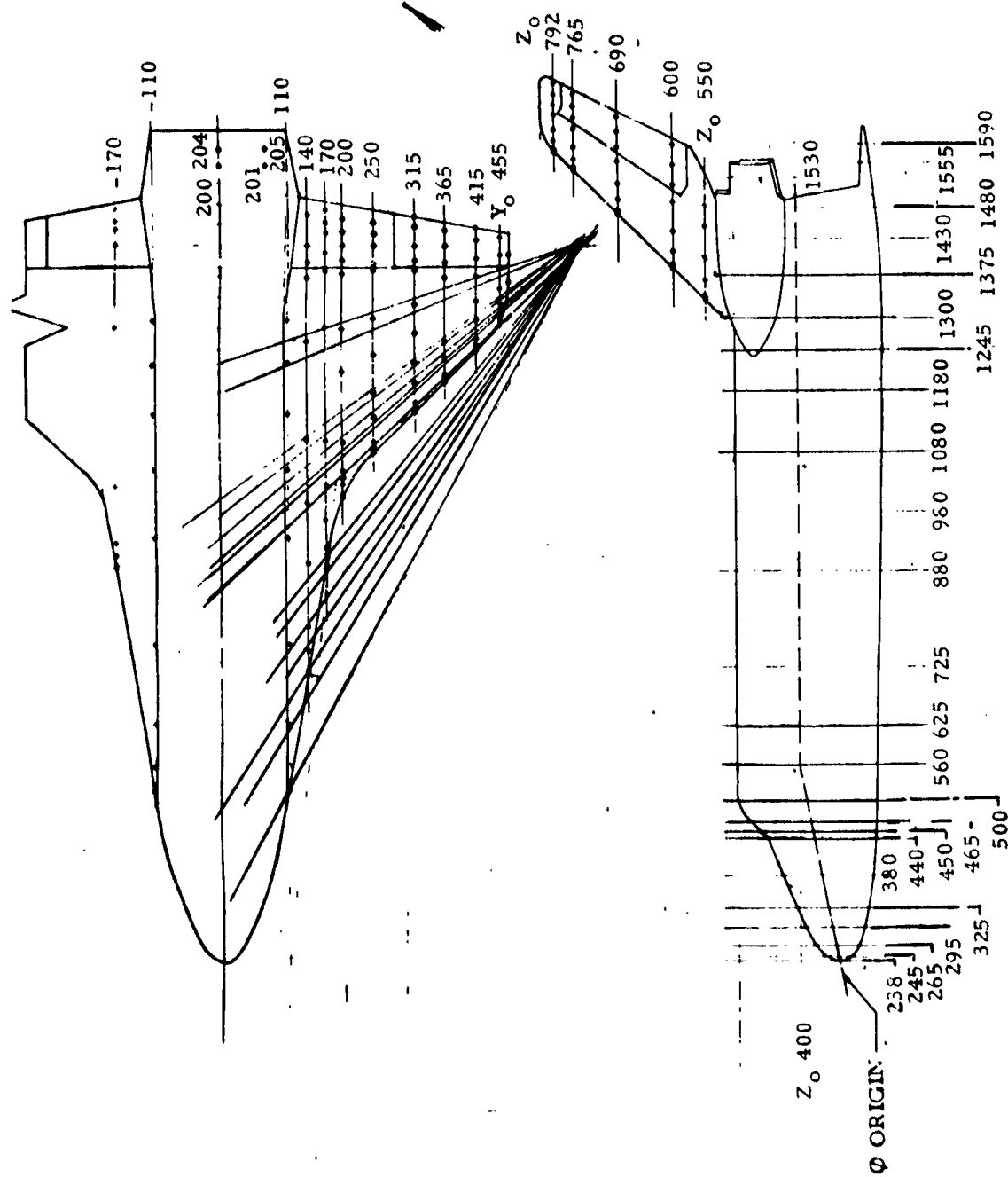
a. Configuration - 140A/B/C/R

Figure 2. - Model sketches.



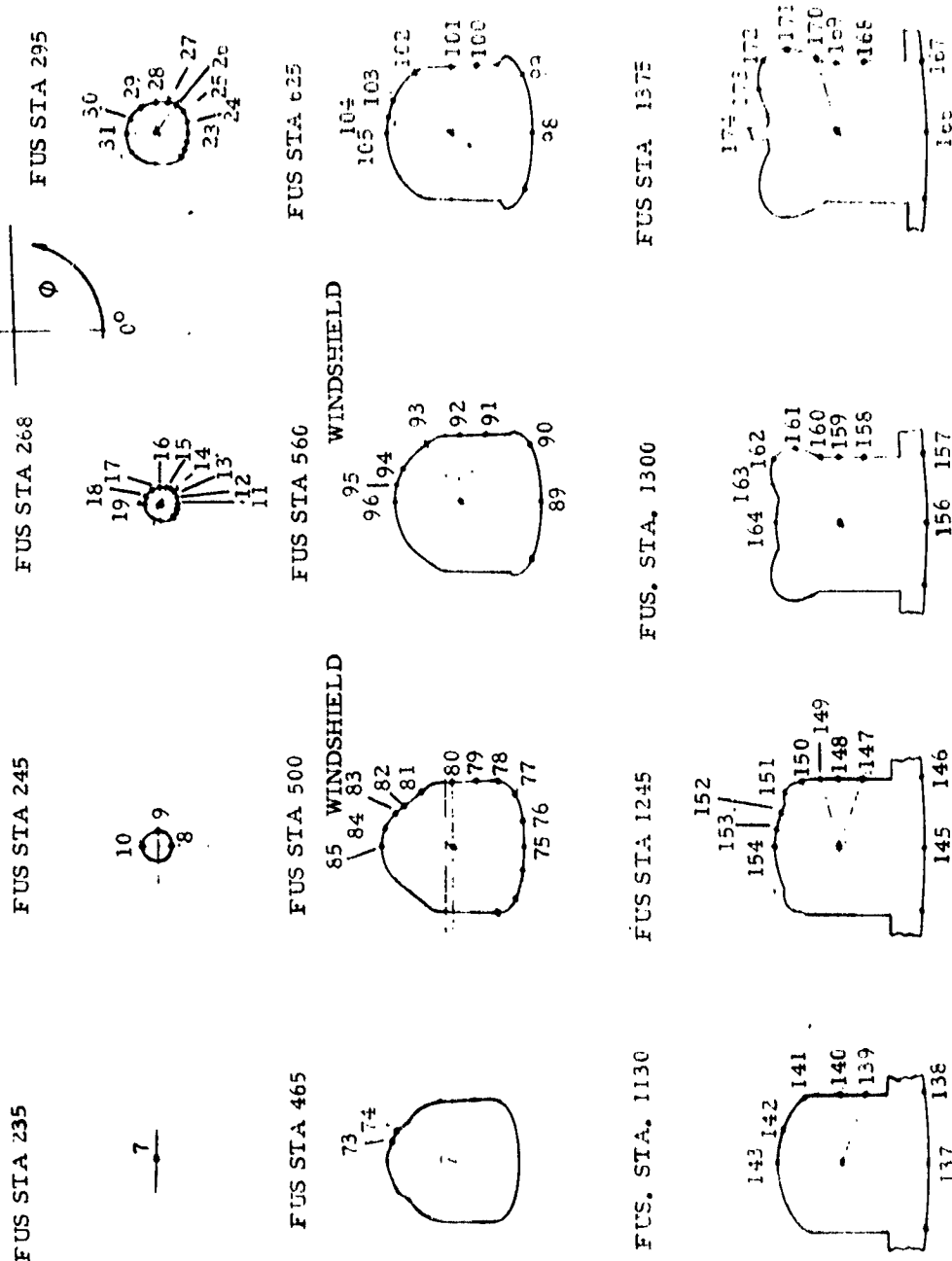
AREA NO.	PROJECTED AXIAL VALUE
A1	0.076699 ft <sup>2</sup>
A2	0.215645 ft <sup>2</sup>
A3	0.034072 ft <sup>2</sup>
A4	0.074167 ft <sup>2</sup>

b. Base Pressure Taps and Areas  
Figure 2. - Continued.



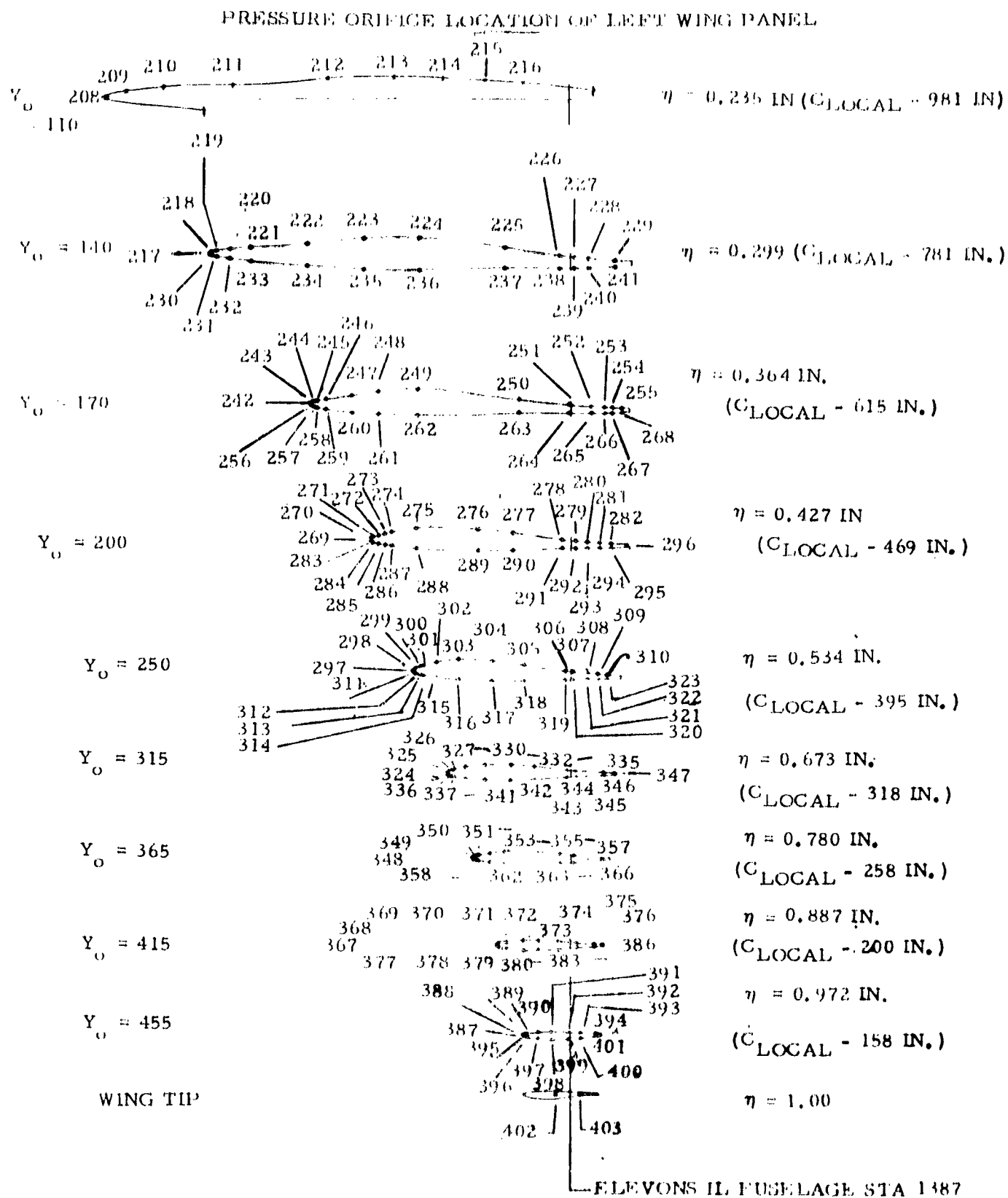
c. Fuselage, Vertical Tail, and Wing Pressure Tap Locations  
Figure 2. - Continued.

NOTE: VIEW LOOKING AFI



c. Fuselage, Vertical Tail, and Wing Pressure Tap Locations  
Figure 2. - Continued.





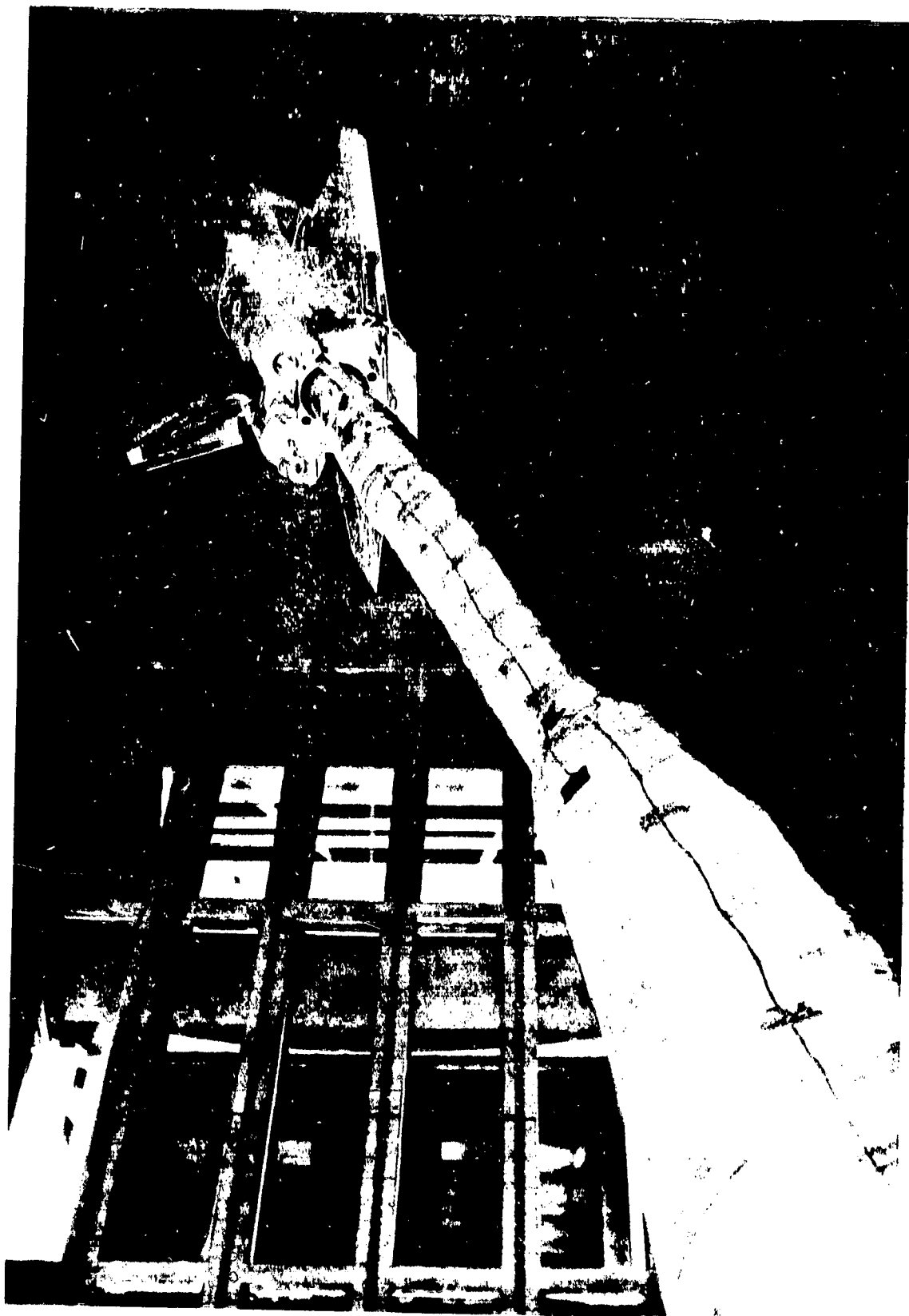
c. Fuselage, Vertical Tail, and Wing Pressure Tap Locations.  
Figure 7. (Continued.)

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a. Three Quarter Front View of model 47-0 in the ARC 11 x 11 UPWT

Figure 3. - Model installation photographs.



b. Three Quarter Rear View of Model 47-0 in the ARC 11 x 11 UPWT

Figure 3. - Concluded.

## APPENDIX

VOLUME NO.	CONTENTS	PAGES
3	TABULATED FORCE DATA  TABULATED PRESSURE DATA  <u>COMPONENT</u>	1-723
4, 5	Orbiter fuselage	1-1270
6, 7, 8 (Note)	Lower wing	1271-3146
9, 10, 11 (Note)	Upper wing	3197- 5404
12	Upper body flap	5405-5773
12	Lower body flap	5774-6142
13	Speed brake	6143-6546
13	Vertical tail	6547-7114

Note: Data tabulated at  $2Y/BW = .673$ ,  $X/CW = .775, .850, .950$  &  $1.00$  were actually located at  $2Y/BW = .641$ ,  $X/CW = .775, .850, .950$  &  $1.00$  as shown in Table V on page 47.





DATE 25 MAY 78

TABULATED PRESSURE DATA - 0A148 (AMES 11-073-1)

PAGE 3

AMES 11-073(0A148) - 140A18/C/R OR3 FUSELAGE

(XEROX)

ALPHA (1) = -.033 BETA (1) = 4.235

SECTION 1 (103) INTER FUSELAGE

DEPENDENT VARIABLE CP

X\Y\B .0000 .0230 .0460 .0700 .1120 .1580 .1770 .2040 .2510 .3010 .3780 .4570 .5740

PHI:

140.000

150.000

151.000

162.000

165.000

169.000

174.000

180.000

1.4544

1.0000

.7334

.6104

.4856

.5471

1.0384

1.0125

.9859

.8467

.5442

.6823

.2055

-.2164

-.3155

-.1824

-.1748

-.1240

PHI:

140.000

150.000

151.000

162.000

165.000

169.000

174.000

180.000

1.4544

1.0000

.7334

.6104

.4856

.5471

1.0384

1.0125

.9859

.8467

.5442

.6823

.2055

-.2164

-.3155

-.1824

-.1748

-.1240

PHI:

140.000

150.000

151.000

162.000

165.000

169.000

174.000

180.000

1.4544

1.0000

.7334

.6104

.4856

.5471

1.0384

1.0125

.9859

.8467

.5442

.6823

.2055

-.2164

-.3155

-.1824

-.1748

-.1240

ALPHA (2) = -.076 BETA (1) = -3.906 MACH = 1.3937 Q = 599.50 P = 440.69 RAYL = 2.9103

SECTION 2 (103) INTER FUSELAGE

DEPENDENT VARIABLE CP

X\Y\B .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4570 .5740

PHI:

140.000

150.000

151.000

162.000

165.000

169.000

174.000

180.000

1.4544

.8022

.3228

.1521

.0654

.0038

.0043

.0041

.1335

.1757

.1404

.1539

.0894

-.0324

-.1182

-.3243

-.1511

-.1709

-.1162

-.2526

-.1552

-.1922

-.2011

-.3139

-.2295

-.1604

-.1260

1.0236

1.0300



DATE 10 FEB 78

TABULATED PRESSURE DATA - OA148 ( AMES 11-073-1 )

PAGE 2

(XESB01)

ALPHA ( 2 ) = -.07; BETA ( 2 ) = .147  
AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

SECTION 1: ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB	.6520	.7290	.7790	.8210	.8790	.9210	.9600	.9990	1.0180	1.0460
PHI										
70.000	-.0054	-.0951	-.1284	.0644	.0184	-.0547	-.0576			
90.000	.0243	-.0437	.0154	.0994	-.0213	-.0545	-.1051			
110.000			.1519	.1224	-.1260	-.1215	-.1457			
130.000	.0130	.0055	.2632	.2041	.0050	-.1459	-.2255	-.2470		
150.000			.2835	.3308	.0783	-.0356	-.0779	-.2348		
170.000	-.0057	.0193	.2891	.3572	.1214	.0544	-.0339			
190.000	-.0140	.3071	.3071	.3350	.3350	.1272	-.3061			
210.000	-.0135	.0097	.3080	.4390						

ALPHA ( 2 ) = -.059 BETA ( 3 ) = 4.215 MACH = 1.3937 Q = 599.50 P = 440.89 RN/L = 2.9103

SECTION 1: ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB	.0000	.0080	.0230	.0460	.0700	.1120	.1580	.1660	.1770	.2040	.2510	.3010	.3780	.4970	.5740
PHI															
20.000			.3238	.1377	.0725	.0153		-.0184	-.0207	-.0063	.0156	.0011	-.0340	-.0385	
40.000	1.4719	.7852	.3222	.1493	.0663	.0170	.0002	-.0188	-.0243	-.0087	-.0276	-.0121	-.0329	-.0349	
60.000			.3957	.1652	.1006	.0387	.0518	.0022	-.0269						
80.000			.4555	.2103	.1516	.0635	.1046	.0518	.0713	-.2598	-.1946	-.1576	-.0526		
100.000		.6216	.4869	.2274	.1562	.0739	.1524	.1046	-.0341	-.2751	-.2793	-.1772	-.0533		
120.000			.5221	.2729	.1466	.0739	.3544	.1524	-.0394	-.2725	-.4596	-.1943	-.0733		
140.000			.5696	.3888	.2274	.2152		.3544	-.1995	-.2725	-.4596	-.1943	-.0733		
160.000			.5914	.4960	.3077	.3013		.8254	-.2494	-.3601	-.2471	-.2053	-.0899		
180.000									.5335						
200.000									.6379						
220.000										-.2214	-.3704	-.1910	-.1912	-.0990	
240.000	1.4719	.8645	.6152	.5182	.3723	.3663	.9710	.9484							
260.000	.6520	.7290	.7790	.8210	.8790	.9210	.9600	.9741	-.3234	-.3475	-.2134	.1745	-.1063		
280.000								.9990							
300.000									1.0180	1.0460					
320.000	-.0223	.0144	.0027	-.0333	-.0974	-.1431	-.2121								
340.000	.0145	.0182	.0182	-.0165	-.1003	-.1022	-.2086								
360.000	-.0144	-.1153	-.0983	.0842	-.0035	-.0892	-.1060	.2397	.2232						
380.000	.0160	-.0555	.0318	.0904	-.0589	-.0952	-.1414	.1463	.0975						
400.000			.1634	.1252	-.1629	-.1685	-.1830								
420.000															
440.000	.0173	.0086	.2227	.0575	-.0708	-.2162	-.3272								
460.000			.2851	.2823	-.0031	-.1043	-.1464								
480.000	-.0154	.0199	.2997	.3016	.0829	-.0290	-.1161								

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

PAGE 5

(XEB901)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = -.058 BETA ( 3 ) = 4.215

SECTION 1 : 110RBINTER FUSELAGE

DEPENDENT VARIABLE CP

X 1 9 .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

Z 1

1.66000 -1.0247 .3050 .2559 .0581 -.3410

1.66000 -1.0287 .3128 .3049 .3267

ALPHA ( 3 ) = 3.525 BETA ( 1 ) = -3.904 MACH = 1.3940 Q = 600.01 P = 441.12 RN/L = 2.5038

SECTION 1 : 110RBINTER FUSELAGE

DEPENDENT VARIABLE CP

X 1 9 .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3720 .4970 .5740

Z 1

1.4703 .9228 .4366 .2469 .1471 .0763 .0449 .0300 .0360 .0297 .0479 .0182 .0132

Z 2

1.4703 .9228 .4366 .2469 .1471 .0763 .0449 .0300 .0360 .0297 .0479 .0182 .0132

Z 3

1.4703 .9228 .4366 .2469 .1471 .0763 .0449 .0300 .0360 .0297 .0479 .0182 .0132

Z 4

1.4703 .9228 .4366 .2469 .1471 .0763 .0449 .0300 .0360 .0297 .0479 .0182 .0132

Z 5

1.4703 .9228 .4366 .2469 .1471 .0763 .0449 .0300 .0360 .0297 .0479 .0182 .0132

Z 6

1.4703 .9228 .4366 .2469 .1471 .0763 .0449 .0300 .0360 .0297 .0479 .0182 .0132

Z 7

1.4703 .9228 .4366 .2469 .1471 .0763 .0449 .0300 .0360 .0297 .0479 .0182 .0132

Z 8

1.4703 .9228 .4366 .2469 .1471 .0763 .0449 .0300 .0360 .0297 .0479 .0182 .0132

Z 9

1.4703 .9228 .4366 .2469 .1471 .0763 .0449 .0300 .0360 .0297 .0479 .0182 .0132

Z 10

1.4703 .9228 .4366 .2469 .1471 .0763 .0449 .0300 .0360 .0297 .0479 .0182 .0132

Z 11

1.4703 .9228 .4366 .2469 .1471 .0763 .0449 .0300 .0360 .0297 .0479 .0182 .0132

Z 12

1.4703 .9228 .4366 .2469 .1471 .0763 .0449 .0300 .0360 .0297 .0479 .0182 .0132

AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

$$\alpha = 3.325 \quad \beta(2) = .145 \quad \text{MACH} = 1.3940 \quad Q = 600.01 \quad P = 441.12 \quad \text{PV/L} = 2.9039$$

SECTION : CRB!TER FUSELAGE

## DEPENDENT VARIABLE CP

Variable	Mean	SD	Alpha	Mean	SD	Alpha
1. Age	35.2	12.5	.92	35.2	12.5	.92
2. Sex	1.2	.4	.78	1.2	.4	.78
3. Education	12.8	2.1	.85	12.8	2.1	.85
4. Income	25.5	8.2	.81	25.5	8.2	.81
5. Health	4.1	1.3	.75	4.1	1.3	.75
6. Employment	2.3	.8	.72	2.3	.8	.72
7. Social Support	3.8	1.1	.79	3.8	1.1	.79
8. Life Satisfaction	4.5	1.2	.83	4.5	1.2	.83
9. Stress	2.7	.9	.76	2.7	.9	.76
10. Coping Strategies	3.2	1.0	.74	3.2	1.0	.74
11. Resilience	4.0	1.1	.80	4.0	1.1	.80
12. Mental Health	3.5	1.0	.77	3.5	1.0	.77
13. Physical Health	4.2	1.1	.79	4.2	1.1	.79
14. Quality of Life	4.8	1.2	.84	4.8	1.2	.84
15. Life Satisfaction	4.5	1.2	.83	4.5	1.2	.83
16. Stress	2.7	.9	.76	2.7	.9	.76
17. Coping Strategies	3.2	1.0	.74	3.2	1.0	.74
18. Resilience	4.0	1.1	.80	4.0	1.1	.80
19. Mental Health	3.5	1.0	.77	3.5	1.0	.77
20. Physical Health	4.2	1.1	.79	4.2	1.1	.79
21. Quality of Life	4.8	1.2	.84	4.8	1.2	.84
22. Life Satisfaction	4.5	1.2	.83	4.5	1.2	.83
23. Stress	2.7	.9	.76	2.7	.9	.76
24. Coping Strategies	3.2	1.0	.74	3.2	1.0	.74
25. Resilience	4.0	1.1	.80	4.0	1.1	.80
26. Mental Health	3.5	1.0	.77	3.5	1.0	.77
27. Physical Health	4.2	1.1	.79	4.2	1.1	.79
28. Quality of Life	4.8	1.2	.84	4.8	1.2	.84
29. Life Satisfaction	4.5	1.2	.83	4.5	1.2	.83
30. Stress	2.7	.9	.76	2.7	.9	.76
31. Coping Strategies	3.2	1.0	.74	3.2	1.0	.74
32. Resilience	4.0	1.1	.80	4.0	1.1	.80
33. Mental Health	3.5	1.0	.77	3.5	1.0	.77
34. Physical Health	4.2	1.1	.79	4.2	1.1	.79
35. Quality of Life	4.8	1.2	.84	4.8	1.2	.84
36. Life Satisfaction	4.5	1.2	.83	4.5	1.2	.83
37. Stress	2.7	.9	.76	2.7	.9	.76
38. Coping Strategies	3.2	1.0	.74	3.2	1.0	.74
39. Resilience	4.0	1.1	.80	4.0	1.1	.80
40. Mental Health	3.5	1.0	.77	3.5	1.0	.77
41. Physical Health	4.2	1.1	.79	4.2	1.1	.79
42. Quality of Life	4.8	1.2	.84	4.8	1.2	.84
43. Life Satisfaction	4.5	1.2	.83	4.5	1.2	.83
44. Stress	2.7	.9	.76	2.7	.9	.76
45. Coping Strategies	3.2	1.0	.74	3.2	1.0	.74
46. Resilience	4.0	1.1	.80	4.0	1.1	.80
47. Mental Health	3.5	1.0	.77	3.5	1.0	.77
48. Physical Health	4.2	1.1	.79	4.2	1.1	.79
49. Quality of Life	4.8	1.2	.84	4.8	1.2	.84
50. Life Satisfaction	4.5	1.2	.83	4.5	1.2	.83
51. Stress	2.7	.9	.76	2.7	.9	.76
52. Coping Strategies	3.2	1.0	.74	3.2	1.0	.74
53. Resilience	4.0	1.1	.80	4.0	1.1	.80
54. Mental Health	3.5	1.0	.77	3.5	1.0	.77
55. Physical Health	4.2	1.1	.79	4.2	1.1	.79
56. Quality of Life	4.8	1.2	.84	4.8	1.2	.84
57. Life Satisfaction	4.5	1.2	.83	4.5	1.2	.83
58. Stress	2.7	.9	.76	2.7	.9	.76

 $\frac{1}{2}$ [illegible]

10

•

[illegible]
$$\begin{aligned} \text{ALPHA} (3) &= 3.827 & \text{BETA} (3) &= 4.205 & \text{MACH} &= 1.3940 & Q &= 600.01 & P &= 441.12 & \text{RZ} &= 2.9039 \end{aligned}$$

REC-100 : 100BITER FUSSELAGE

## DEPENDENT VARIABLE CP

[illegible]

•

[illegible]



DATE 10 FEB 78

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

PAGE 9

ALPHA ( 4 ) = 7.859 BETA ( 1 ) = -3.903

(XEB801)

AMES 11-073(0A148) - 40A/B/C/R ORB FUSELAGE

SECTION 1 ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB	PHI	0.000	.0080	.0230	.0460	.0700	.1120	.1580	.1660	.1770	.2040	.2510	.3010	.3780	.4970	.5740
PHI																
180.000	1.4361	.6241	.7500	.3047	.1736	.1831			.8599		-.3862	-.4286	-.2744	-.2182	-.0723	
X/LB	.6520	.7290	.7790	.8210	.8790	.9210	.9600		.9990	1.0180	1.0460					
PHI																
.000	-.0951	.1132	.1285	.0979	.0395	-.0150	-.0842									
40.000	.1307	.1471	.1109	.0168	.0130	-.0945			.4429	.3833						
70.000	-.1377	-.2410	-.2829	-.2598	-.1401	-.1406	-.0808		.3220	.2313						
90.000	-.0361	-.1978	-.2468	-.0367	-.1332	-.1971	-.2261									
105.000		-.1201	.0129	-.1637	-.2684	-.2843										
110.000																
120.000	-.1816	-.1679	.0633	.0615	-.0627	-.1980	-.2522		-.3264							
135.000		.0573	.1046	-.0544	-.1387	-.1297			-.3051							
150.000	-.0909	-.0247	.0543	.1061	.0361	-.0014	-.1009									
155.000	-.0630		.0709	.2351	.1254	-.3020										
180.000	-.0504	-.0335	.1135	.3363												

ALPHA ( 4 ) = 7.859 BETA ( 2 ) = .143 MACH = .3935 Q = 599.60 P = 441.12 RN/L = 2.9058

SECTION 1 ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB	PHI	0.000	.0080	.0230	.0460	.0700	.1120	.1580	.1660	.1770	.2040	.2510	.3010	.3780	.4970	.5740
PHI																
.000	1.4452	1.0408	.5509	.3540	.2411	.1602			.1127		.0906	.0710	.0702	.0986	.0776	.0748
20.000			.5684	.3736	.2497	.1733			.1099		.0796			.0593	.0619	.0717
40.000			.6258	.3820	.2896	.1733			.1410		.0593	.0980	.0959	.0955		
55.000			.6129	.3767	.2968	.1567			.1239		.0719					
70.000			.5915	.3401	.2559	.1538			.1244		.1450	-.1529	-.0889	-.0975	-.1587	
90.000	.6868		.5629	.3329	.2318	.1336			.1353		.1471	-.1687	-.1277	-.1427	-.1683	
120.000			.5117	.3255	.2185	.1880			.4531		.0983	-.1878	-.3597	-.3257	-.1762	
140.000											.0102					
150.000			.4298	.3437	.1671	.1954			.7823		-.2103	-.4370	-.3445	-.1872	-.0754	
151.000																
162.000																
165.000																
169.000																
174.000																
180.000																
X/LB	1.4452	.6201	.3781	.3344	.1833	.1980		.8350	.8716		-.2843	-.4011	-.2948	-.2022	-.0552	
PHI																
.000	.6520	.7290	.7790	.8210	.8790	.9210	.9600		.8837		-.4184	-.4393	-.2529	-.2110	-.0498	
40.000									.9930	1.0180	1.0460					
PHI																
.000	.0850	.1168	.1399	.1154	.0460	-.0065	-.0771		.4330	.3756						
40.000	.1128		.1532	.1207	.0371	.0123	-.0933		.3155	.2327						



DATE 10 FEB 78 TABULATED PRESSURE DATA - OA148 ( AMES 11-073-1 )

(XEB301)

AMES 11-073(OA148) -1404/B/C/R ORB FUSELAGE

ALPHA = 7.999 BETA ( 3 ) = 4.207

SECTION 1 : ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X 129 .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PH:

.650000 -.0412 .1182 .1743 -.0662 -.3472  
 .990000 -.0490 -.0153 .1051 .2777

ALPHA = 5 = 11.90+ BETA ( 1 ) = -3.884 MACH = 1.3941 Q = 599.51 P = 440.65 RN/L = 2.9230

SECTION 2 : ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X 129 .0000 .0090 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3720 .4970 .5740

PH:

.13999 1.1537 .6762 .4672 .3257 .2525 .2921 .2503 .2000 .1577 .1424 .1136 .1423 .1471 .1437  
 .7185 .5106 .3611 .2525 .2921 .2503 .2000 .1577 .1424 .1136 .1423 .1471 .1437  
 .7887 .5453 .4208 .2921 .2503 .2000 .1577 .1424 .1136 .1423 .1471 .1437  
 .7458 .5130 .4030 .2427 .1883 .1883 .1883 .1883 .1883 .1883 .1883 .1883 .1883 .1883 .1883  
 .6721 .4519 .3371 .2346 .1883 .1883 .1883 .1883 .1883 .1883 .1883 .1883 .1883 .1883 .1883  
 .6151 .4063 .2953 .1947 .1814 .1814 .1814 .1814 .1814 .1814 .1814 .1814 .1814 .1814 .1814  
 .4835 .3046 .1769 .1563 .1036 .1036 .1036 .1036 .1036 .1036 .1036 .1036 .1036 .1036 .1036  
 .3444 .2238 .1401 .1256 .6545 .6877 .8257 .7882 .9990 1.0180 1.0460

1.3999 .4908 .2535 .2261 .1018 .1159 .6611 .8257 .7882 .9990 1.0180 1.0460

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

.1743 .1995 .2211 .1892 .1321 .0772 -.0003 .5473 .4113 .4526 .2825

PH:

.2205 .2548 .3531 .3027 .2074 .0544 -.0985 .5473 .4113 .4526 .2825  
 .1859 .3312 .3531 .3027 .2074 .0544 -.0985 .5473 .4113 .4526 .2825  
 .1151 .2550 .3131 .2922 .2003 .1939 .0865 .5473 .4113 .4526 .2825  
 .2737 .2083 .2215 .2914 .1770 .2468 .2667 .5473 .4113 .4526 .2825  
 .1843 .1924 .0452 .0537 .1306 .2226 .2376 .5473 .4113 .4526 .2825  
 .0520 .1201 .1017 .1414 .1696 .5473 .4113 .4526 .2825  
 .1340 .1847 .1892 .2534 .0460 .1305 .2063 .5473 .4113 .4526 .2825  
 .0976 .1071 .2011 .0140 .13267 .5473 .4113 .4526 .2825  
 .0595 .0780 .4203 .5473 .4113 .4526 .2825







DATE 10 SEP 76

TABULATED PRESSURE DATA - OAL48 ( AXES 11-073-1 )

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AXES 11-073/OAL48: -140A/B/C/R ORB FUSELAGE

XREFS01:

ALPHA = 15.000 BETA = 21 = .149

SECTION 11-080/TER FUSELAGE

DEPENDENT VARIABLE CP

X1/B .6520 .7230 .7790 .8210 .8790 .9210 .9500 .9990 1.0180 1.0460

P=1

20.000	1.3523	1.4333	1.5429	1.777	1.5111	1.3709	1.2194
30.000	1.2150	1.3371	1.4128	1.2609	1.3727	1.3571	1.3057
40.000		1.2367	1.1011	1.1011	1.1011	1.1011	1.1011
50.000	1.1172	1.1609	1.0899	1.0162	1.1939	1.2494	1.3343
60.000		1.0119	1.0119	1.0119	1.0119	1.0119	1.0119
70.000	1.1600	1.1785	1.1333	1.2071	1.1062	1.1838	1.2375
80.000	1.0352	1.1031	1.1333	1.2071	1.1062	1.1838	1.2375
90.000	1.0740	1.0515	1.0818	1.0553	1.2127	1.0894	1.3559

-1.4070  
-1.3912

ALPHA = 15.000 BETA = 31 = 4.249 MACH = 1.3335

SECTION 11-080/TER FUSELAGE

DEPENDENT VARIABLE CP

X1/B .6500 .6930 .7330 .7810 .8450 .9000 .9590 1.0180 1.0460

P=1

20.000	1.3140	1.2370	1.2889	1.5774	1.4325	1.2920	1.2553
30.000		1.1795	1.1795	1.4044	1.4044	1.2920	1.2553
40.000		1.6935	1.4730	1.3562	1.3562	1.2319	1.2319
50.000		1.4912	1.2960	1.1962	1.1962	1.0121	1.1574
60.000		1.4043	1.2217	1.1378	1.0529	1.0529	1.0181
70.000	1.2222	1.3735	1.1822	1.1662	1.0237	1.0237	1.0318
80.000	1.3010	1.1235	1.0365	1.0365	1.0292	1.0292	1.0292
90.000	1.2023	1.1316	1.0422	1.0422	1.0437	1.0437	1.0437

.4579  
.5279

X1/B .63140 .6554 .6930 .7790 .8210 .8790 .9210 .9500 .9990 1.0180 1.0460

P=1

20.000	1.2557	1.3155	1.3319	1.3357	1.2278	1.1555	1.0400
30.000	1.2531	1.2531	1.2531	1.2531	1.2113	1.1513	1.0120
40.000	1.2531	1.2531	1.2531	1.2531	1.2531	1.2531	1.2531
50.000	1.2531	1.2531	1.2531	1.2531	1.2531	1.2531	1.2531
60.000	1.2531	1.2531	1.2531	1.2531	1.2531	1.2531	1.2531
70.000	1.2531	1.2531	1.2531	1.2531	1.2531	1.2531	1.2531
80.000	1.2531	1.2531	1.2531	1.2531	1.2531	1.2531	1.2531
90.000	1.2531	1.2531	1.2531	1.2531	1.2531	1.2531	1.2531

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P=1 .41.12 RVL = 2.3239

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TABLEAUED PRESSURE DATA - 04148 ( AMES : 1-073-1 )  
AMES 1-073(04148) - 140A/B/C/R CBB FUELSAGE

5324 11-0130Z (84:70)ZLC-11 140A/B/C/B 033 EEC B/7/B/YC41- 0373501 EEC FUELAGE

4-11-66 • 15:00 • BEA (3) • 1-2-66

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DEPENDENT VARIABLE CD 378718VA INECN3D30

	X = 3	X = 0	X = -3	X = -6	X = -9	X = -12	X = -15	X = -18	X = -21	X = -24	X = -27	X = -30	X = -33	X = -36	X = -39	X = -42	X = -45	X = -48	X = -51	X = -54	X = -57	X = -60	X = -63	X = -66	X = -69	X = -72	X = -75	X = -78	X = -81	X = -84	X = -87	X = -90	X = -93	X = -96	X = -99	X = -102	X = -105	X = -108	X = -111	X = -114	X = -117	X = -120	X = -123	X = -126	X = -129	X = -132	X = -135	X = -138	X = -141	X = -144	X = -147	X = -150	X = -153	X = -156	X = -159	X = -162	X = -165	X = -168	X = -171	X = -174	X = -177	X = -180	X = -183	X = -186	X = -189	X = -192	X = -195	X = -198	X = -201	X = -204	X = -207	X = -210	X = -213	X = -216	X = -219	X = -222	X = -225	X = -228	X = -231	X = -234	X = -237	X = -240	X = -243	X = -246	X = -249	X = -252	X = -255	X = -258	X = -261	X = -264	X = -267	X = -270	X = -273	X = -276	X = -279	X = -282	X = -285	X = -288	X = -291	X = -294	X = -297	X = -300	X = -303	X = -306	X = -309	X = -312	X = -315	X = -318	X = -321	X = -324	X = -327	X = -330	X = -333	X = -336	X = -339	X = -342	X = -345	X = -348	X = -351	X = -354	X = -357	X = -360	X = -363	X = -366	X = -369	X = -372	X = -375	X = -378	X = -381	X = -384	X = -387	X = -390	X = -393	X = -396	X = -399	X = -402	X = -405	X = -408	X = -411	X = -414	X = -417	X = -420	X = -423	X = -426	X = -429	X = -432	X = -435	X = -438	X = -441	X = -444	X = -447	X = -450	X = -453	X = -456	X = -459	X = -462	X = -465	X = -468	X = -471	X = -474	X = -477	X = -480	X = -483	X = -486	X = -489	X = -492	X = -495	X = -498	X = -501	X = -504	X = -507	X = -510	X = -513	X = -516	X = -519	X = -522	X = -525	X = -528	X = -531	X = -534	X = -537	X = -540	X = -543	X = -546	X = -549	X = -552	X = -555	X = -558	X = -561	X = -564	X = -567	X = -570	X = -573	X = -576	X = -579	X = -582	X = -585	X = -588	X = -591	X = -594	X = -597	X = -600	X = -603	X = -606	X = -609	X = -612	X = -615	X = -618	X = -621	X = -624	X = -627	X = -630	X = -633	X = -636	X = -639	X = -642	X = -645	X = -648	X = -651	X = -654	X = -657	X = -660	X = -663	X = -666	X = -669	X = -672	X = -675	X = -678	X = -681	X = -684	X = -687	X = -690	X = -693	X = -696	X = -699	X = -702	X = -705	X = -708	X = -711	X = -714	X = -717	X = -720	X = -723	X = -726	X = -729	X = -732	X = -735	X = -738	X = -741	X = -744	X = -747	X = -750	X = -753	X = -756	X = -759	X = -762	X = -765	X = -768	X = -771	X = -774	X = -777	X = -780	X = -783	X = -786	X = -789	X = -792	X = -795	X = -798	X = -801	X = -804	X = -807	X = -810	X = -813	X = -816	X = -819	X = -822	X = -825	X = -828	X = -831	X = -834	X = -837	X = -840	X = -843	X = -846	X = -849	X = -852	X = -855	X = -858	X = -861	X = -864	X = -867	X = -870	X = -873	X = -876	X = -879	X = -882	X = -885	X = -888	X = -891	X = -894	X = -897	X = -900	X = -903	X = -906	X = -909	X = -912	X = -915	X = -918	X = -921	X = -924	X = -927	X = -930	X = -933	X = -936	X = -939	X = -942	X = -945	X = -948	X = -951	X = -954	X = -957	X = -960	X = -963	X = -966	X = -969	X = -972	X = -975	X = -978	X = -981	X = -984	X = -987	X = -990	X = -993	X = -996	X = -999	X = -1002	X = -1005	X = -1008	X = -1011	X = -1014	X = -1017	X = -1020	X = -1023	X = -1026	X = -1029	X = -1032	X = -1035	X = -1038	X = -1041	X = -1044	X = -1047	X = -1050	X = -1053	X = -1056	X = -1059	X = -1062	X = -1065	X = -1068	X = -1071	X = -1074	X = -1077	X = -1080	X = -1083	X = -1086	X = -1089	X = -1092	X = -1095	X = -1098	X = -1101	X = -1104	X = -1107	X = -1110	X = -1113	X = -1116	X = -1119	X = -1122	X = -1125	X = -1128	X = -1131	X = -1134	X = -1137	X = -1140	X = -1143	X = -1146	X = -1149	X = -1152	X = -1155	X = -1158	X = -1161	X = -1164	X = -1167	X = -1170	X = -1173	X = -1176	X = -1179	X = -1182	X = -1185	X = -1188	X = -1191	X = -1194	X = -1197	X = -1200	X = -1203	X = -1206	X = -1209
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## TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

PAGE 1B

ALPHA ( 1 ) = -4.075 BETA ( 2 ) = .154 MACH = 1.2475 Q = 599.57 P = 550.40 RN/L = 3.0108 (XEB802)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

## SECTION 1 ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB	.0000	.0080	.0230	.0460	.0700	.1120	.1580	.1660	.1770	.2040	.2510	.3010	.3780	.4970	.5740
PHI															
20.000	1.4120	.6265	.1927	.0412	.0047			-.0098		-.0028	-.0126	-.0634	-.0789	-.0960	-.0615
40.000			.2095	.0613	-.0036	-.0381		-.0283		-.0387	-.1423	-.1224	-.0698	-.0944	-.0626
60.000			.3496	.0837	.0190	-.0333		-.0551		-.1497					
80.000			.4738	.2192	.1514	.0657		.0550		-.0215					
100.000		.7815	.5548	.2962	.2211	.1775		.1267		.0116	-.3400	-.2077	-.1191	.0002	
120.000			.6213	.3707	.2665	.2238		.1590		-.0875	-.3235	-.3190	-.1219	-.0126	
140.000			.7095	.5181	.3838	.4441		.3907		-.0440	-.2737	-.4948	-.1928	-.0461	
160.000			.7392	.6175	.4969	.5711		.8551		-.2813	-.3663	-.2500	-.1623	-.0643	
180.000									.5642						
200.000									.6438						
220.000										-.2727	-.3474	-.1718	-.1893	-.0693	
240.000	1.4120	1.0090	.7401	.6234	.5359	.6129	1.0440	.9427		-.3411	-.4131	-.1490	-.1638	-.0717	
260.000	.6520	.7230	.7790	.8210	.8790	.9210	.9600	.9990	1.0180	1.0460					

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20.000	1.4120	.6265	.1927	.0412	.0047			-.0098		-.0028	-.0126	-.0634	-.0789	-.0960	-.0615
40.000			.2095	.0613	-.0036	-.0381		-.0283		-.0387	-.1423	-.1224	-.0698	-.0944	-.0626
60.000			.3496	.0837	.0190	-.0333		-.0551		-.1497					
80.000			.4738	.2192	.1514	.0657		.0550		-.0215					
100.000		.7815	.5548	.2962	.2211	.1775		.1267		.0116	-.3400	-.2077	-.1191	.0002	
120.000			.6213	.3707	.2665	.2238		.1590		-.0875	-.3235	-.3190	-.1219	-.0126	
140.000			.7095	.5181	.3838	.4441		.3907		-.0440	-.2737	-.4948	-.1928	-.0461	
160.000			.7392	.6175	.4969	.5711		.8551		-.2813	-.3663	-.2500	-.1623	-.0643	
180.000									.5642						
200.000									.6438						
220.000										-.2727	-.3474	-.1718	-.1893	-.0693	
240.000	1.4120	1.0090	.7401	.6234	.5359	.6129	1.0440	.9427		-.3411	-.4131	-.1490	-.1638	-.0717	
260.000	.6520	.7230	.7790	.8210	.8790	.9210	.9600	.9990	1.0180	1.0460					

ALPHA ( 1 ) = -4.033 BETA ( 2 ) = 4.234 MACH = 1.2475 Q = 599.57 P = 550.40 RN/L = 3.0108

## SECTION 1 ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB	.0000	.0080	.0230	.0460	.0700	.1120	.1580	.1660	.1770	.2040	.2510	.3010	.3780	.4970	.5740
PHI															
20.000	1.3935	.6147	.1945	.0339	.0021			-.0409		-.0128	-.0142	-.0593	-.0708	-.1031	-.0787
40.000			.1950	.0447	-.0108	-.0472		-.0214		-.0231					
60.000			.2953	.0468	.0066	-.0351		-.0318		-.0908	-.0987	-.1100	-.0810	-.0893	-.0442
80.000			.3883	.1374	.0782	.0157		.0205		-.0542					
100.000		.6334	.4528	.1896	.1246	.0886		.0680		-.0499	-.3880	-.2492	-.1391	-.0170	
120.000			.5156	.2550	.1812	.1212		.0782		-.1847	-.3951	-.3724	-.1312	-.0224	
140.000			.6118	.4199	.2714	.3384		.2766		-.1591	-.3470	-.5560	-.2637	-.0629	

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DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

PAGE 20

ALPHA ( 2 ) = -.037 BETA ( 1 ) = -3.909

(XEB802)

AMES (1-073(0A148) -140A/B/C/R ORB FUSELAGE

SECTION 1 (ICP9) FUSELAGE

DEPENDENT VARIABLE CP

X/B	0.000	.0080	.0230	.0460	.0700	.1120	.1580	.1660	.1770	.2040	.2510	.3010	.3780	.4570	.5740
P41															
120.000	1.4184	.8942	.6086	.4994	.3899	.5112		.8673		-.4232	-.4334	-.2482	-.2076	-.0835	
X/B	.6520	.7290	.7790	.8210	.8790	.9210	.9600	.9990	1.0180	1.0460					
P41															
0.000	.0195	.0149	.0066	-.0477	-.1160	-.1737	-.2391		.2549	.2141					
20.000	-.0176	-.0171	-.0458	-.1311	-.1141	-.1141	-.2988		.1441	.0893					
40.000	.0062	-.0987	-.1739	.1682	.0671	-.0212	-.0190								
60.000	.5239	-.0394	-.0635	.1532	.0486	-.0494	-.0775								
80.000	.051000	.1512	.1512	.1821	-.0225	-.1214	-.1593								
100.000															
120.000	-.0029	-.0127	.3225	.2239	-.0412	-.1181	-.1318		-.2397	-.2505					
140.000	.3949	.3637	-.0203	-.0295	-.0447										
160.000	.0043	.0361	.3672	.3544	.0646	.0726	-.0092								
180.000	.0019	.3626		.5807	.1657	-.3345									
200.000	.0029	.0655	.3519	.3664											

ALPHA ( 2 ) = -.032 BETA ( 2 ) = .147 MACH = 1.2477 Q = 599.51 P = 550.16 RV/L = 3.0131

SECTION 1 (ICP9) FUSELAGE

DEPENDENT VARIABLE CP

X/B	0.000	.0080	.0230	.0460	.0700	.1120	.1580	.1660	.1770	.2040	.2510	.3010	.3780	.4570	.5740
P41															
0.000	1.4225	.7623	.3020	.1355	.0789	.0171		.0172		.0336	.0328	-.0107	-.0321	-.0552	-.0520
20.000			.3204	.1560	.0742	.0435		.0196		.0063					
40.000			.4454	.1891	.1153	.0435		.0429		-.0335	-.0440	-.0528	-.0290	-.0732	-.0329
60.000			.5333	.2833	.2022	.1265		.1277		.0496					
80.000		.7573	.5715	.3213	.2233	.1783		.1716		.0628	-.3078	-.1778	-.1412	-.2429	
100.000			.4693	.3559	.2321	.2286		.2011		-.0170	-.3037	-.2750	-.1527	-.3465	
120.000			.5452	.4559	.3111	.4037		.4163		-.0239	-.2733	-.14793	-.1633	-.0654	
140.000			.6388	.5119	.3710	.4939		.8250		-.1103					
160.000									.5481	-.3198	-.4659	-.3176	-.1849	-.0577	
180.000									.6186						
200.000	1.4205	.8591	.6180	.5011	.4065	.5224	.9934	.9176		-.3270	-.3940	-.2459	-.2042	-.0537	
X/B	.6520	.7290	.7790	.8210	.8790	.9210	.9600	.9990	1.0180	1.0460					
P41															
0.000	.0128	.0216	.0093	-.0417	-.1193	-.1737	-.2423								
20.000	.0010	.0059	-.0329	-.1253	-.1313	-.2761		.9020		-.4615	-.4744	-.2192	-.2090	-.0542	

(20553X;

AMES 11-073(CA148) -140A/B/C/R ORB FUSELAGE

4-4-63 = -032 SEA (2) = .147

## SECTION, CENTER FUSELAGE

## DEPENDENT VARIABLE CP

[illegible]
$$\alpha_1(3) = -0.339 \quad \beta_1(3) =$$

PNZ = 3.0131

SECRET, NOCIPHER FUSILLAGE

## DEPENDENT VARIABLE CP

[illegible]

## 7-14

[illegible]

-.3422  
-.3465

DATE: 11 FEB 78  
TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
AMES 11-073(0A148) - 140A/B/C/R ORB FUSELAGE

!XEBG2;

4-4-60 11:39 AM # 4.211

SEC. 10. : CB: -CB FUSELAGE  
DEPENDENT VARIABLE CP

[illegible][illegible]

$z_1 = 3.559$       $z_2 = 3.559$       $\Delta T_A ( ) = -3.910$       $MACH = 1.2468$       $Q = 599.65$       $P = 551.19$       $PRV = 3.0149$

[illegible][illegible]

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2
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Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100

[illegible][illegible]

	6089	6090	6091	6092	6093	6094	6095	6096	6097	6098	6099	6100	6101	6102	6103	6104	6105	6106	6107	6108	6109	6110	6111	6112	6113	6114	6115	6116	6117	6118	6119	6120	6121	6122	6123	6124	6125	6126	6127	6128	6129	6130	6131	6132	6133	6134	6135	6136	6137	6138	6139	6140	6141	6142	6143	6144	6145	6146	6147	6148	6149	6150	6151	6152	6153	6154	6155	6156	6157	6158	6159	6160	6161	6162	6163	6164	6165	6166	6167	6168	6169	6170	6171	6172	6173	6174	6175	6176	6177	6178	6179	6180	6181	6182	6183	6184	6185	6186	6187	6188	6189	6190	6191	6192	6193	6194	6195	6196	6197	6198	6199	6200	6201	6202	6203	6204	6205	6206	6207	6208	6209	6210	6211	6212	6213	6214	6215	6216	6217	6218	6219	6220	6221	6222	6223	6224	6225	6226	6227	6228	6229	6230	6231	6232	6233	6234	6235	6236	6237	6238	6239	6240	6241	6242	6243	6244	6245	6246	6247	6248	6249	6250	6251	6252	6253	6254	6255	6256	6257	6258	6259	6260	6261	6262	6263	6264	6265	6266	6267	6268	6269	6270	6271	6272	6273	6274	6275	6276	6277	6278	6279	6280	6281	6282	6283	6284	6285	6286	6287	6288	6289	6290	6291	6292	6293	6294	6295	6296	6297	6298	6299	6300	6301	6302	6303	6304	6305	6306	6307	6308	6309	6310	6311	6312	6313	6314	6315	6316	6317	6318	6319	6320	6321	6322	6323	6324	6325	6326	6327	6328	6329	6330	6331	6332	6333	6334	6335	6336	6337	6338	6339	6340	6341	6342	6343	6344	6345	6346	6347	6348	6349	6350	6351	6352	6353	6354	6355	6356	6357	6358	6359	6360	6361	6362	6363	6364	6365	6366	6367	6368	6369	6370	6371	6372	6373	6374	6375	6376	6377	6378	6379	6380	6381	6382	6383	6384	6385	6386	6387	6388	6389	6390	6391	6392	6393	6394	6395	6396	6397	6398	6399	6400	6401	6402	6403	6404	6405	6406	6407	6408	6409	6410	6411	6412	6413	6414	6415	6416	6417	6418	6419	6420	6421	6422	6423	6424	6425	6426	6427	6428	6429	6430	6431	6432	6433	6434	6435	6436	6437	6438	6439	6440	6441	6442	6443	6444	6445	6446	6447	6448	6449	6450	6451	6452	6453	6454	6455	6456	6457	6458	6459	6460	6461	6462	6463	6464	6465	6466	6467	6468	6469	6470	6471	6472	6473	6474	6475	6476	6477	6478	6479	6480	6481	6482	6483	6484	6485	6486	6487	6488	6489	6490	6491	6492	6493	6494	6495	6496	6497	6498	6499	6500	6501	6502	6503	6504	6505	6506	6507	6508	6509	6510	6511	6512	6513	6514	6515	6516	6517	6518	6519	6520	6521	6522	6523	6524	6525	6526	6527	6528	6529	6530	6531	6532	6533	6534	6535	6536	6537	6538	6539	6540	6541	6
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[illegible]

600

[illegible][illegible]

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

[illegible]

- .2746

[illegible][illegible]

DATE 10 FEB 73

## TABULATED PRESSURE DATA - OA148 ( .MES 11-073-1 )

PAGE 23

ALPHA Z = 3.859 BETA ( 2 ) = .139 MACH = 1.2168 Q = 599.65 P = 551.10 PN/L = 3.0140  
 SECTION ( 1 ) ORBITER FUSELAGE (XEB902)

X/LB	0.000	.0080	.0230	.0460	.0700	.1120	.1660	.1770	.2040	.2510	.3010	.3780	.4970	.5740
PHI														
0.000	1.4117	.8871	.4187	.2453	.1465		.0497		.0645	.0731	.0434	.2218	-.0101	-.0166
20.000			.4359	.2654	.1539	.0748	.0580		.0475					
40.000			.5330	.2911	.1940	.0967	.1023		.0511	.0391	.0097	.0249	-.0269	-.0114
55.000			.5732	.3422	.2477	.1450	.1742		.0987					
70.000			.5770	.3412	.2353	.1609	.1946		.1087	-.2726	-.1558	-.1387	-.1140	
85.000		.7212	.5844	.3579	.2249	.1768	.2325		.0451	-.2815	-.2107	-.1924	-.1059	
100.000			.5763	.4011	.2379	.3098	.4355		.0001	-.2741	-.4682	-.2226	-.1198	
115.000							.7908		-.0889	-.3312	-.5179	-.3741	-.1917	-.0534
130.000			.5347	.4218	.2303	.3952		.5363						
145.000								.5947						
160.000							.8748		-.3738	-.4435	-.3004	-.2214	-.0522	
175.000	1.4117	.7350	.4993	.4030	.2774	.4201	.9826		-.5159	-.5215	-.2694	-.2309	-.0510	
190.000	.6520	.7290	.7790	.8210	.8790	.9210	.9600	1.0180	1.0460					

PHI:

X/LB

0.000

20.000

40.000

55.000

70.000

85.000

100.000

115.000

130.000

145.000

160.000

175.000

190.000

ALPHA ( 3 ) = 3.860

BETA ( 3 ) = 4.204

MACH = 1.2458

Q = 599.65

P = 551.10

PN/L = 3.0140

SECTION ( 1 ) ORBITER FUSELAGE

X/LB

0.000

20.000

40.000

55.000

70.000

85.000

100.000

115.000

130.000

145.000

160.000

175.000

190.000

PHI:

X/LB

0.000

20.000

40.000

55.000

70.000

85.000

100.000

115.000

130.000

145.000

160.000

175.000

190.000





DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

1X080022

ALPHA ( 1 ) = 7.8-1 BETA ( 2 ) = .143

SECTION 1 ORBITER FUSELAGE

X LB .6500 .7200 .7700 .8210 .8700 .9210 .9500 .9900 1.0180 1.0450

DEPENDENT VARIABLE CP

PHI  
70.000 -1.1352 -1.2497 -1.3104 -1.0556 -1.1400 -1.0831 -1.1301  
90.000 -1.0775 -1.1891 -1.2648 -1.0132 -1.0972 -1.2353  
110.000 -1.0290 -1.1407 -1.2156 -1.0467 -1.2956 -1.3133 -1.2862  
130.000 -1.0006 -1.0952 -1.1070 -1.0288 -1.1529 -1.2833 -1.3555  
150.000 -1.0211 -1.0322 -1.1125 -1.2185 -1.0913 -1.1946 -1.2501  
170.000 -1.0136 -1.0122 -1.1345 -1.4019 -1.0127 -1.1213 -1.1972  
190.000 -1.0093 -1.0084 -1.1500 -1.5000 -1.0738 -1.0671 -1.3721  
210.000 -1.0093 -1.0084 -1.1500 -1.5000 -1.0738 -1.0671 -1.3721

SECTION 2 ORBITER FUSELAGE

X LB .6500 .7200 .7700 .8210 .8700 .9210 .9500 .9900 1.0180 1.0450

DEPENDENT VARIABLE CP

PHI  
70.000 -1.1352 -1.2497 -1.3104 -1.0556 -1.1400 -1.0831 -1.1301  
90.000 -1.0775 -1.1891 -1.2648 -1.0132 -1.0972 -1.2353  
110.000 -1.0290 -1.1407 -1.2156 -1.0467 -1.2956 -1.3133 -1.2862  
130.000 -1.0006 -1.0952 -1.1070 -1.0288 -1.1529 -1.2833 -1.3555  
150.000 -1.0211 -1.0322 -1.1125 -1.2185 -1.0913 -1.1946 -1.2501  
170.000 -1.0136 -1.0122 -1.1345 -1.4019 -1.0127 -1.1213 -1.1972  
190.000 -1.0093 -1.0084 -1.1500 -1.5000 -1.0738 -1.0671 -1.3721  
210.000 -1.0093 -1.0084 -1.1500 -1.5000 -1.0738 -1.0671 -1.3721

SECTION 3 ORBITER FUSELAGE

X LB .6500 .7200 .7700 .8210 .8700 .9210 .9500 .9900 1.0180 1.0450

DEPENDENT VARIABLE CP

PHI  
70.000 -1.1352 -1.2497 -1.3104 -1.0556 -1.1400 -1.0831 -1.1301  
90.000 -1.0775 -1.1891 -1.2648 -1.0132 -1.0972 -1.2353  
110.000 -1.0290 -1.1407 -1.2156 -1.0467 -1.2956 -1.3133 -1.2862  
130.000 -1.0006 -1.0952 -1.1070 -1.0288 -1.1529 -1.2833 -1.3555  
150.000 -1.0211 -1.0322 -1.1125 -1.2185 -1.0913 -1.1946 -1.2501  
170.000 -1.0136 -1.0122 -1.1345 -1.4019 -1.0127 -1.1213 -1.1972  
190.000 -1.0093 -1.0084 -1.1500 -1.5000 -1.0738 -1.0671 -1.3721  
210.000 -1.0093 -1.0084 -1.1500 -1.5000 -1.0738 -1.0671 -1.3721

RV/L = 3.0137

P = 551.34

Q = 599.60

0

MACH = 1.2465

DEPENDENT VARIABLE CP

X LB .6500 .7200 .7700 .8210 .8700 .9210 .9500 .9900 1.0180 1.0450

PHI

70.000 -1.1352 -1.2497 -1.3104 -1.0556 -1.1400 -1.0831 -1.1301  
90.000 -1.0775 -1.1891 -1.2648 -1.0132 -1.0972 -1.2353  
110.000 -1.0290 -1.1407 -1.2156 -1.0467 -1.2956 -1.3133 -1.2862  
130.000 -1.0006 -1.0952 -1.1070 -1.0288 -1.1529 -1.2833 -1.3555  
150.000 -1.0211 -1.0322 -1.1125 -1.2185 -1.0913 -1.1946 -1.2501  
170.000 -1.0136 -1.0122 -1.1345 -1.4019 -1.0127 -1.1213 -1.1972  
190.000 -1.0093 -1.0084 -1.1500 -1.5000 -1.0738 -1.0671 -1.3721  
210.000 -1.0093 -1.0084 -1.1500 -1.5000 -1.0738 -1.0671 -1.3721

DATE 10 FEB 78

TABULATED PRESSURE DATA - 04:48 ( AMES 11-073-1 )

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(XEB332)

ALPHA = 0.8-1 BETA ( 3 ) = 4.209

AMES 11-073(04148) -140A/B/C/R ORB FUSELAGE

SECTION 1: ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/B .6520 .7290 .7790 .8210 .8790 .9210 .9500 .9930 1.0180 1.0460

PH:

165.000 -.0191 .1758  
180.000 -.0222 .0112 .1518 .3708

.1262 -.1325 -.3992

ALPHA 5) = 11.9-2 BETA ( 1 ) = -3.887 MACH = 1.2452 Q = 593.20 P = 552.04 RAYL = 3.0172

SECTION 1: ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/B .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PH:

165.000 1.3187 1.1124  
180.000 .7572 .7572 .3526 .2371 .1915  
195.000 .7777 .5273 .4064 .3016 .1922  
210.000 .7305 .5075 .3933 .2502 .2430 .1655 .1738 .1242 .1544  
225.000 .6598 .4452 .3121 .2364 .1884 .1239 .0552 .0050 -.0570  
240.000 .5975 .3987 .2754 .1951 .2345 .1785 .0783 .1246 .1978  
255.000 .4669 .2902 .1745 .1649 .4601 .1153 .2137 .3889 .5651 .7447  
270.000 .3318 .2321 .1093 .1330 .8352 .6033 .5393 .2734 .1571  
285.000 .5792 .5980 .8442 .7542 .5792 .5522 .4521 .2430 .1380  
300.000 .7739 .7542 .5548 .5443 .3466 .2149 .0649

PH:

165.000 1.3187 .4573 .2450 .2228 .0793 .1211 .7739  
180.000 .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9950 1.0180 1.0460

X/B

PH:

165.000 .1872 .2716 .2856 .2102 .1212 .0303 -.0709  
180.000 .2193 .3137 .2273 .0920 .0534 -.1060 .4023  
195.000 .2603 .3939 .4035 .2212 .1282 .1245 .1144 .3910 .2415  
210.000 .1669 .2846 .3675 .0846 .2295 .1266 .1792  
225.000 .2953 .0023 .2691 .2684 .2275  
240.000 .1853 .2039 .0206 .1759 .2655 .2565  
255.000 .1109 .2142 .0328 .1626 .1920 .2113  
270.000 .0225 .0335 .3255 .0745 .1707 .2559  
285.000 .1055 .0544 .0300 .1650 .0282 .3971  
300.000 .4913











DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XE8803)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = -.027 BETA ( 1 ) = -3.903

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1860 .1770 .2040 .2510 .3010 .3780 .4570 .5740

PHI

180.000 1.3310 .6528 .6045 .5083 .4345 .5000 .7742 -.6100 -.5260 -.3073 -.2564 -.0439

X/LB

.6520 .7290 .7790 .8210 .8780 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .1003 .0547 .0165 -.0602 -.1486 -.2103 -.2982 .2787 .1934

40.000

.0177 .0253 -.0497 -.1744 -.1802 -.3603 .1812 .1093

70.000

.0334 -.1445 .0462 .0373 -.0468 -.0819

90.000

.0647 -.0917 .1522 .2727 .0092 .1241 -.1211

110.000

.2611 .2767 -.0845 -.1829 -.1663

120.000

.0365 .0180 .3860 .2933 -.1419 -.1627 -.2032 -.3972

135.000

.4476 .4294 -.1048 -.0742 -.1279 -.2830

150.000

.0884 .1637 .4395 .3924 -.0081 -.0057 -.1105

165.000

.0894 .4170 .2557 .0602 -.3977

180.000

.0970 .2027 .3940 .4529

ALPHA ( 2 ) = -.023 BETA ( 2 ) = .144 MACH = 1.0988 C = 599.62 P = 709.54 RN/L = 3.1898

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1860 .1770 .2040 .2510 .3010 .3780 .4570 .5740

PHI

.000 1.3347 .6887 .2601 .1550 .0406 .0239 .0246 .0049 -.0354 -.0972 -.0684 -.1019 -.0215

20.000

.2792 .2792 .0442 .0172 -.0155

40.000

.4031 .1815 .0901 .0041 -.0701 -.0962 -.1231 -.0650 -.0950 .0075

55.000

.4941 .2778 .1903 .0622 -.0306

70.000

.5418 .3162 .2267 .0988 -.0236 -.4432 -.2149 -.1887 -.0613

90.000

.7208 .5813 .2604 .2354 .1182 -.4331 -.3141 -.1818 -.0584

120.000

.6259 .4535 .3461 .3941 .3205 -.1395 -.3869 -.6081 -.1540 -.0469

140.000

.6305 .5146 .4175 .4759 .7359 -.2200 -.4858 -.5845 -.3852 -.2075 -.0310

150.000

.4379 .5035

162.000

.5035 -.5222 -.2982 -.2423 -.0206

165.000

.8557

174.000

.9262 .6074

180.000

.9262 .6074

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .0932 .0419 .0032 -.0682 -.1507 -.2041 -.2600 .3209 .2153

40.000

.0441 .0103 -.0675 -.1401 -.1713 -.3241 .1671 .0844

**(XEBB03)**

1:0/310A(4B) -140A/B/C/R ORB FUSELAGE

$$\text{ALPHA} (2) = -.023 \quad \text{BETA} (2) = .144$$

## SECTION (1) ORBITER FUSELAGE

SECTION ( 110) ORBITER FUSELAGE		DEPENDENT VARIABLE CP									
X/LB		.6520	.7290	.7790	.8210	.8790	.9210	.9600	.9990	1.0180	1.0460
PHI											
70.000		.0191	-.1469	.1210	.2239	-.0059	-.0920	-.1446			
90.000		.0486	-.0704	.1966	.2091	-.0457	-.1437	-.1663			
115.000				.2695	.1923	-.1346	-.2137	-.2377			
120.000		.0636	.0989	.3322	.1978	-.1744	-.2298	-.2841	-.4286		
135.000				.3824	.4106	-.1028	-.1490	-.1971	-.3628		
150.000		.0901	.1655	.4028	.4270	-.0248	-.0915	-.1813			
165.000		.0949		.4054		.1879	-.0390	-.4007			
180.000		.0905	.1959	.4046	.5423						

ALPHA ( 2 ) = -.029    BETA ( 3 ) = 4.209    MACH = 1.0988    Q = 599.82    P = 709.54    RN/L = 3.1868

SECTION ( 1 ) ORBITER FUSELAGE

## SECTION ( ) ORBITER FUSELAGE

[illegible]

	1970-1980	1980-1990	1990-2000	2000-2010	2010-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	2070-2080	2080-2090	2090-2100
180,000	1.3231	.8258	.6175	.5194	.4391	.3775	.3208	.2695	.2235	.1828	.1475	.1175	.0928
X/LB	.6520	.7290	.7760	.8120	.8380	.8540	.8610	.8590	.8480	.8290	.8020	.7670	.7230

## 五

[illegible]

DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEBB03)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = -.029 BETA ( 3 ) = 4.209

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB	.6520	.7290	.7790	.8210	.8790	.9210	.9600	.9990	1.0180	1.0460
PHI										
165.000	.1117	.2072	.3932		.1210	-.1305	-.4148			
180.000	.1086		.4018	.4692						

ALPHA ( 3 ) =	3.893	BETA ( 1 ) =	-3.903	MACH =	1.0982	Q	=	599.43	P	=	710.01	FN/L	=	3.1853
SECTION ( 1 ) ORBITER FUSELAGE														
X/LB	.0090	.0080	.0230	.0460	.0700	.1120	.1580	.1860	.1770	.2040	.2510	.3010	.3780	.4970
PHI														
20.000	1.3210	.8205	.3830	.2359	.1377			.0870		.0417	.0132	-.0389	-.0322	-.0600
40.000			.4256	.2731	.1479	.0818		.0815		.0228				-.0441
55.000			.5701	.4203	.2206	.1520		.0917		.0104		-.0403	-.0047	-.0686
70.000			.6459	.4309	.3258	.2547		.1783		.0731				.0094
90.000		.8243	.6619	.4423	.3358	.2972		.1952		.0822		-.1318	-.1447	-.1028
120.000			.6865	.4577	.3408	.3262		.2291		.0343		-.1856	-.2013	-.1047
140.000			.6387	.4729	.3627	.4227		.4173		-.0042		-.1912	-.3101	-.1801
150.000			.5593	.4366	.3451	.4367		.7882		-.3229		-.4963	-.2122	-.0835
162.000									.5034					
165.000									.5317					
169.000										-.5558		-.6048	-.4525	-.2253
174.000														
180.000	1.3210	.7124	.4842	.3945	.3330	.4282	.8980	.8183		-.8609		-.5934	-.3801	-.2482

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB	.6520	.7290	.7790	.8210	.8790	.9210	.9600	.9990	1.0180	1.0460
PHI										
40.000	.1647	.1675	.1259	.0369	-.0700	-.1855	-.2579			
70.000	.1048		.1433	.0453	-.1014	-.1114	-.3069			
90.000	-.0638	-.2407	-.3117	.1597	-.0164	-.0499	-.0342			
105.000	-.0249	-.1815	-.0779	.1503	-.0516	-.1581	-.0772			
110.000			.1259	.1499	-.1267	-.2370	-.0938			
120.000	-.0562	-.0811	.2746	.1491	-.1691	-.2328	-.2511			
135.000			.3038	.2951	-.1572	-.1491	-.1939			
150.000	.0334	.0998	.3112	.2932	-.0789	-.0705	-.1747			
165.000	.0604		.3176		.2076	.0192	-.4028			
180.000	.0788	.1345	.3083	.3783						





DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AVES 11-073-1 )

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(XEB803)

AVES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 7.886 BETA ( 1 ) = -3.898

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1860 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

180.000 1.2901 .5719 .3617 .2836 .2244 .3619 .6929 -.7071 -.6556 -.3976 -.2156 -.0540

X/LB

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9980 1.0180 1.0460

PHI

.000 .2463 .2527 .2002 .0924 -.0104 -.1160 -.2148

40.000

.2501 .1106 -.0502 -.0518 -.2539

70.000

.0985 -.3264 -.3962 .0254 -.0159 -.0543 -.0937

90.000

.0707 -.2544 -.2945 .0148 -.0643 -.1218 -.1444

105.000

.0073 .0715 -.1186 -.1876 -.2090

110.000

.0000 .1612 .1051 -.2152 -.2198 -.2174

120.000

.0000 .1560 .3223 -.1934 -.1821 -.1973

135.000

.0000 -.0588 .1485 .4084 -.0868 -.1388

150.000

.0431 .2038 .1420 -.0605 -.0035

165.000

.0627 .0016 .4952

180.000

.0000 .1392 .1354 .1559 .1445 .1518 .1762 .3502

PHI

.0000 .1168 .0670 .0253 .0301 .0039 .0156

20.000

.0000 .1067 .1230 .0444 .0092 .0263 -.0208 .0237

40.000

.0000 .0924 .0612 .0071 .00951 .0057 .0057 .0057

55.000

.0000 .0612 .0071 .00951 .0057 .0057 .0057 .0057

70.000

.0000 .0071 .00951 .0057 .0057 .0057 .0057 .0057

90.000

.0000 .0071 .00951 .0057 .0057 .0057 .0057 .0057

120.000

.0000 .0071 .00951 .0057 .0057 .0057 .0057 .0057

140.000

.0000 .0071 .00951 .0057 .0057 .0057 .0057 .0057

150.000

.0000 .0071 .00951 .0057 .0057 .0057 .0057 .0057

162.000

.0000 .0071 .00951 .0057 .0057 .0057 .0057 .0057

165.000

.0000 .0071 .00951 .0057 .0057 .0057 .0057 .0057

169.000

.0000 .0071 .00951 .0057 .0057 .0057 .0057 .0057

174.000

.0000 .0071 .00951 .0057 .0057 .0057 .0057 .0057

180.000

.0000 .0071 .00951 .0057 .0057 .0057 .0057 .0057

PHI

.0000 .0071 .00951 .0057 .0057 .0057 .0057 .0057

40.000

.0000 .0071 .00951 .0057 .0057 .0057 .0057 .0057

# 441

DEPENDENT VARIABLE CP

.6520	.7290	.7790	.8210	.8790	.9210	.9600	.999C	1.0180	1.0460
X/1/B									

Phi							
70.000	-.1141	-.3319	-.3964	.0512	-.0791	-.1234	-.1501
90.000	-.0677	-.2311	-.1967	.0214	-.1743	-.1740	-.1721
105.000			.0361	.0627	-.2439	-.2576	-.2824
120.000							
135.000	-.0270	-.1009	.1227	.0724	-.2705	-.3264	-.3135
150.000							
165.000							
180.000							
195.000							
210.000							
225.000							
240.000							
255.000							
270.000							
285.000							
300.000							
315.000							
330.000							
345.000							
360.000							
375.000							
390.000							
405.000							
420.000							
435.000							
450.000							
465.000							
480.000							
495.000							
510.000							
525.000							
540.000							
555.000							
570.000							
585.000							
600.000							
615.000							
630.000							
645.000							
660.000							
675.000							
690.000							
705.000							
720.000							
735.000							
750.000							
765.000							
780.000							
795.000							
810.000							
825.000							
840.000							
855.000							
870.000							
885.000							
900.000							
915.000							
930.000							
945.000							
960.000							
975.000							
990.000							
1005.000							
1020.000							
1035.000							
1050.000							
1065.000							
1080.000							
1095.000							
1110.000							
1125.000							

ALPHA ( 4 ) = 7.886    BETA ( 3 ) = 4.200    MACH = 1.0976    Q = 599.10    P = 710.48    RAVL = 3.1859

SECTION : 11061TER FUSELAGE

[illegible][illegible]

DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 (AVES 11-073-1)

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AVES 11-07310A148) -140A/B/C/R ORB FUSELAGE

(XEB803)

ALPHA (4) = 7.886 BETA (3) = 4.200

## SECTION (1) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7730 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 .0902 .2626 .0145 -.2608 -.4600  
180.000 .0618 -.0027 .4709

ALPHA (5) = 11.990 BETA (1) = -3.881 MACH = 1.0978 Q = 599.38 P = 710.48 RV/L = 3.1858

## SECTION (1) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .000C .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.2323 1.0949 .6344 .4594 .3271 .2524 .2000 .1862 .1299 .1024 .1174 .0923 .2068  
20.000 .6804 .4914 .3511 .2524 .2081 .1881 .1881 .1881 .1881 .1881 .1881 .1881 .1881  
40.000 .7429 .5218 .4013 .3217 .2482 .2088 .2088 .2088 .2088 .2088 .2088 .2088 .2088  
55.000 .6979 .4900 .3792 .2803 .2116 .1716 .1716 .1716 .1716 .1716 .1716 .1716 .1716  
70.000 .6270 .4289 .3055 .2810 .2238 .2238 .2238 .2238 .2238 .2238 .2238 .2238 .2238  
90.000 .5659 .3835 .2793 .2760 .2430 .2430 .2430 .2430 .2430 .2430 .2430 .2430 .2430  
120.000 .4378 .2829 .1799 .2886 .3932 .3932 .3932 .3932 .3932 .3932 .3932 .3932 .3932  
140.000 .3064 .2177 .1216 .3027 .7478 .7478 .7478 .7478 .7478 .7478 .7478 .7478 .7478  
151.000 .151.000 .151.000 .151.000 .151.000 .151.000 .151.000 .151.000 .151.000 .151.000 .151.000 .151.000 .151.000 .151.000  
162.000 .162.000 .162.000 .162.000 .162.000 .162.000 .162.000 .162.000 .162.000 .162.000 .162.000 .162.000 .162.000 .162.000  
169.000 .169.000 .169.000 .169.000 .169.000 .169.000 .169.000 .169.000 .169.000 .169.000 .169.000 .169.000 .169.000 .169.000  
174.000 .174.000 .174.000 .174.000 .174.000 .174.000 .174.000 .174.000 .174.000 .174.000 .174.000 .174.000 .174.000 .174.000  
180.000 .180.000 .180.000 .180.000 .180.000 .180.000 .180.000 .180.000 .180.000 .180.000 .180.000 .180.000 .180.000 .180.000

X/LB

1.2323 .4122 .2340 .1983 .1264 .3093 .8065 .7532 .6575 .7515 .6941 .4292 .1928 .0553

X/LB

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .3212 .3272 .2640 .1595 .0597 .0602 .1598 .5295 .3195  
40.000 .3500 .2951 .1822 .1822 .0166 .0198 .2073 .3693 .1696  
70.000 .1378 .3857 .4675 .0567 .0846 .2196 .2423 .2423 .2423  
90.000 .0723 .29 .3992 .0210 .0992 .2045 .3315 .3315 .3315  
105.000 .1336 .0506 .1495 .2733 .3570 .3570 .3570 .3570 .3570  
110.000 .1779 .2012 .0409 .0944 .1947 .2651 .2426 .2426 .2426  
120.000 .0632 .2808 .4514 .1365 .2023 .3033 .3033 .3033 .3033  
135.000 .0569 .1739 .0428 .0796 .1084 .14518 .14518 .14518 .14518  
150.000 .0423 .1387 .2068 .5734 .5734 .5734 .5734 .5734 .5734  
180.000 .0769 .0466 .2068 .5734 .5734 .5734 .5734 .5734 .5734

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB803)

ALPHA ( 5 ) = 11.997 BETA ( 2 ) = .149 MACH = 1.0978 Q = 599.38 P = 710.48 RN/L = 3.1856

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB	.0300	.0080	.0230	.0460	.0700	.1120	.1580	.1660	.1770	.2040	.2510	.3010	.3780	.4970	.5740
PHI	1.2403	1.0607	.6397	.4566	.3283			.2392	.1857	.1353	.1062	.1168	.0985	.1848	
20.000			.6476	.4682	.3319	.2428		.2035	.1754	.1710	.0967	.0720	.0944	.0673	.2022
40.000			.6517	.4601	.3448	.2616		.2132	.1710	.1169					
55.000			.5732	.3755	.2704	.1889		.1416		.1015	-.2874	-.2083	-.2028	-.3328	
70.000			.5073	.3181	.2027	.2130		.1606	.0413	.1015	-.3641	-.2338	-.2678	-.3121	
90.000	.5600		.4641	.2895	.1834	.2228		.1885	-.0680	.0413	-.4121	-.5703	-.6939	-.2119	
120.000			.3794	.2361	.1272	.2885		.3513	-.1951						
140.000								.6632	-.4780	-.7849	-.5960	-.2461	-.1039		
150.000			.2974	.2292	.1031	.3089		.3989							
162.000								.4227							
165.000								.6985	-.6466	-.6813	-.4533	-.1983	-.0525		
169.000								.6861	-.7708	-.7423	-.4159	-.1852	-.0425		
174.000							.7616								
180.000	1.2403	.4012	.2582	.2077	.1248	.3232	.9600	.9990	1.0180	1.0460					
X/LB	.6520	.7290	.7790	.8210	.8790	.9210	.9600								

PHI

.5378

.3719

.3238

.1682

.4500

.3683

.3735

.3249

.3131

.3255

.1849

.2898

.3319

.0432

.2184

.4581

.6152

ALPHA ( 5 ) = 11.992 BETA ( 3 ) = .4212 MACH = 1.0978 Q = 599.38 P = 710.48 RN/L = 3.1856

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB	.0000	.0080	.0230	.0460	.0700	.1120	.1580	.1660	.1770	.2040	.2510	.3010	.3780	.4970	.5740
PHI	1.2251	1.0423	.6229	.4455	.3195			.1998	.1756	.1315	.1063	.1115	.0910	.1750	
20.000			.5956	.4285	.2931	.2050		.1784	.1517	.1153	.0458	.0282	.0474	.0291	.1639
40.000			.5473	.3806	.2709	.1835		.1603	.1153	.0748					
55.000			.4501	.2651	.1588	.0998		.0716	.0748	.0748					
70.000			.3917	.2191	.1092	.1538		.1052	.0826	-.3324	-.2769	-.2649	-.3558		
90.000	.4105		.3632	.1957	.0951	.1634		.1394	-.0117	-.4109	-.3030	-.3380	-.2488		
120.000			.3212	.1726	.0705	.2654		.2968	-.1513	-.4717	-.6180	-.3582	-.1574		

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TABLULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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**PAGE**

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(X58803)

$$\text{ALPHA} (5) = 11.992 \quad \text{BETA} (3) = 4.212$$

## SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

[illegible]

## PARAMETRIC DATA

RUDDER =	.000	SPDRX =	55.000
BDFLAP =	16.300	L-ELVN =	.000
R-ELVN =	.000	HACH =	.900

## REFERENCE DATA

SPREF	=	2690.0000	SG.FT.	=	XAPP	=	1076.6800	IN. X0
LPREF	=	474.6300	IN.	=	YAPP	=	.0000	IN. Y0
BPREF	=	936.0689	IN.	=	ZAPP	=	375.0000	IN. Z0
SCALE	=	.0300						

ALPHA ( 1 ) =	0.000000	ALPHA ( 2 ) =	0.000000	BETA ( 1 ) =	-3.080	MACH	= 0.00013	Q	= 599.67	P	= 1059.7	RN/L	= 3.5733
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## SECTION 11 ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

[illegible][illegible]

3303	1.0000	1.0000
3915	1.0000	1.0000

Variable	Mean	Standard Deviation	Minimum	Maximum
Age	37.73	7.728	22	52
Gender	0.245	0.432	0	1
Education	13.83	1.52	12	16

- .9454	- .7758	- .0121	.0099	.0328
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	.6520	.7290	.8210	.8790	.9210	.9600	.9990	1.0180	1.0460
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PHI

0663 .1045

05.000	.1936	.2363	.0020	-.1167	0.131	- .3381
10.000						

2642  
2391

[illegible]

0847 - .0627 - .1398

65.000	.0735	.3299	.1166	-.0359	-.3151
20.000	1736	3074	6101		

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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ALPHA ( 1 ) = -.4.036 BETA ( 2 ) = .153 MACH = .99913 Q = 599.67 P = 1059.7 RN/L = 3.5733  
(XEB804)

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB	.0000	.0080	.0230	.0460	.0700	.1120	.1580	.1660	.1770	.2040	.2510	.3010	.3780	.4970	.5740
PHI	1.1997	.3618	-.0734	-.1253	-.2064	-.2245	-.2128	-.2152	-.2137	-.1979	-.0647	-.0270	.0082	-.0101	
20.000			-.0526	-.1230	-.2221	-.2245	-.2128	-.2394	-.2379	-.3432	-.3550	-.0748	-.0408	-.0127	-.0139
40.000			.1026	-.1138	-.2060	-.1314	-.1314	-.2373	-.3384	-.3238	-.7712	-.0389	.0456	.0865	
55.000			.2462	.0178	-.0615	-.0196	-.1694	-.1748	-.4503	-.7363	-.0836	.0327	.0777	.0777	
70.000			.3484	.1081	.0264	-.0094	.0633	-.1694	-.4275	-.6785	-.1583	.0096	.0488	.0488	
90.000	.5888		.4288	.1875	.0953	.0094	.0633	-.1694	-.4486	-.7988	-.8476	-.0322	.0192	.0774	
120.000			.5356	.3483	.2262	.2293									
140.000			.5895	.4628	.3585	.3717			.2321						
150.000									.3124						
162.000								.6902		-.8462	-.7463	-.0163	.0199	.0493	
165.000							.8163								
169.000										-.9557	-.7164	-.0056	.0213	.0479	
174.000															
180.000	1.1997	.8367	.5961	.4761	.3999	.4221	.8163	.6784							
X/LB	.6520	.7290	.7790	.8210	.8790	.9210	.9600	.9090	1.0180	1.0460					

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB	.0000	.0080	.0230	.0460	.0700	.1120	.1580	.1660	.1770	.2040	.2510	.3010	.3780	.4970	.5740
PHI	1.1997	.3618	-.0734	-.1253	-.2064	-.2245	-.2128	-.2152	-.2137	-.1979	-.0647	-.0270	.0082	-.0101	
20.000			-.0526	-.1230	-.2221	-.2245	-.2128	-.2394	-.2379	-.3432	-.3550	-.0748	-.0408	-.0127	-.0139
40.000			.1026	-.1138	-.2060	-.1314	-.1314	-.2373	-.3384	-.3238	-.7712	-.0389	.0456	.0865	
55.000			.2462	.0178	-.0615	-.0196	-.1694	-.1748	-.4503	-.7363	-.0836	.0327	.0777	.0777	
70.000			.3484	.1081	.0264	-.0094	.0633	-.1694	-.4275	-.6785	-.1583	.0096	.0488	.0488	
90.000	.5888		.4288	.1875	.0953	.0094	.0633	-.1694	-.4486	-.7988	-.8476	-.0322	.0192	.0774	
120.000			.5356	.3483	.2262	.2293									
140.000			.5895	.4628	.3585	.3717			.2321						
150.000									.3124						
162.000								.6902		-.8462	-.7463	-.0163	.0199	.0493	
165.000							.8163								
169.000										-.9557	-.7164	-.0056	.0213	.0479	
174.000															
180.000	1.1997	.8367	.5961	.4761	.3999	.4221	.8163	.6784							
X/LB	.6520	.7290	.7790	.8210	.8790	.9210	.9600	.9090	1.0180	1.0460					

ALPHA ( 1 ) = -.4.047 BETA ( 3 ) = .4.237 MACH = .89913 Q = 33.67 P = 1059.7 RN/L = 3.5733

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB	.0000	.0080	.0230	.0460	.0700	.1120	.1580	.1660	.1770	.2040	.2510	.3010	.3780	.4970	.5740
PHI	1.1837	.3350	-.0908	-.1281	-.2274	-.2240	-.2000	-.2163	-.292	-.1828	-.0786	-.0317	.0037	-.0160	
20.000			-.0831	-.1343	-.2274	-.2240	-.2000	-.2315	-.292	-.1828	-.0786	-.0317	.0037	-.0160	
40.000			.0319	-.1372	-.2111	-.2000	-.1674	-.2775	-.292	-.1828	-.0786	-.0317	.0037	-.0160	
55.000			.1431	-.0578	-.1296	-.1674	-.0905	-.2747	-.292	-.1828	-.0786	-.0317	.0037	-.0160	
70.000			.2231	-.0038	-.0704	-.0905	-.0833	-.2454	-.292	-.1828	-.0786	-.0317	.0037	-.0160	
90.000	.4182		.2945	.0544	-.0389	-.0833	-.0833	-.2618	-.292	-.1828	-.0786	-.0317	.0037	-.0160	
120.000			.4153	.2335	.0394	.1164		-.0716	-.292	-.1828	-.0786	-.0317	.0037	-.0160	



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TABULATED PRESSURE DATA - 0A148 ( ANES 11-073-1 )

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ANES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(4E8804)

ALPHA ( 2 ) = -.025 BETA ( 1 ) = -3.907

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB	.0000	.0080	.0230	.0460	.0700	.1120	.1580	.1660	.1770	.2040	.2510	.3010	.3780	.4970	.5740
PHI															
180.000	1.2133	.7181	.4606	.3628	.2866	.3303		.5886	-1.0549	-.8710	-.0689	.0121	.0055		
X/LB	.6520	.7290	.7790	.8210	.8790	.9210	.9600	.9990	1.0180	1.0460					
PHI															
.000	-.0273	-.0789	-.1511	-.2697	-.3576	-.1948	-.0109		.2878	.1012					
40.000	-.0905	-.1344	-.2594	-.3253	-.1988	-.0973			.1951	.0345					
70.000	-.1045	-.2032	-.0021	.1547	-.0474	.0018	-.0496								
90.000	-.0648	-.1337	.0703	.1880	-.1052	-.0605	-.1086								
105.000			.1449	.2327	-.2142	-.1165	-.1490								
110.000								-.3403							
120.000	-.0518	-.0183	.2561	.3109	-.3111	-.1742	-.1635	-.2858							
135.000			.3167	.3549	-.2520	-.1269	-.1554								
150.000	-.0047	.0708	.3055	.2982	-.1713	-.0973	-.1580								
165.000	-.0033	.2790	.2790	.0649	-.0845	-.3150									
180.000	-.0018	.0761	.2582	.4010											

ALPHA ( 2 ) = -.020 BETA ( 2 ) = .144 MACH = .89827 Q = 599.10 P = 1060.7 RV/L = 3.5698

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB	.0000	.0080	.0230	.0460	.0700	.1120	.1580	.1660	.1770	.2040	.2510	.3010	.3780	.4970	.5740
PHI															
.000	1.2159	.5261	.0792	-.0242	-.1056	-.1470		-.1505	-.1735	-.1934	-.0721	-.0184	.0324	.0294	
20.000		.0979	.0979	-.0076	-.1104	-.1193		-.1667	-.1858	-.2871	-.0627	-.0127	.0174	.0420	
40.000			.2326	.0129	-.0742	-.1159		-.1885	-.2208	-.2407					
55.000			.3320	.1159	.0309	-.0299		-.1412	-.2945	-.7329	-.0868	.0045	.0427		
70.000			.3147	.1559	.0671	.0288		-.1182	-.3737	-.7142	-.1212	.0071	.0338		
90.000	.5748		.4310	.2008	.0859	.0561		-.1060	-.4134	-.6859	-.2142	.0119	.0238		
120.000			.4828	.3067	.1949	.2204		.0930	-.4991						
140.000			.4890	.3722	.2727	.3077		.5521	-.8400	-.9550	-.1798	.0229	.0165		
150.000									.2064						
162.000									.2720	-.9262	-.8633	-.0692	.0195	.0194	
165.000								.6481							
169.000								.6282							
174.000	1.2159	.7086	.4765	.3743	.2970	.3462	.7729		-.9428	-.8619	-.0606	.0219	.0165		
180.000	.6520	.7290	.7790	.8210	.8790	.9210	.9600	.9990	1.0180	1.0460					
PHI															
.000	-.0301	-.0840	-.1492	-.2670	-.3538	-.1868	-.0102		.3206	.1072					
40.000	-.0687		-.1399	-.2526	-.3041	-.1933	-.0699		.1831	.0165					



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE6804)

ALPHA ( 2 ) = -.027 BETA ( 3 ) = 4.215

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

## PHI

165.000 -.0030 .2441  
180.000 -.0051 .0752 .4294  
- .1774 -.4012 -.3222

ALPHA ( 3 ) = 3.898 BETA ( 1 ) = -3.912 MACH = .89833 Q = 598.89 P = 1060.2 RN/L = 3.5704

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

## PHI

.000 1.2035 .6724 .2130 .0800 -.0155  
20.000 .2595 .1117 -.0055  
40.000 .4182 .1660 .0650  
55.000 .5031 .2786 .1795 .0919  
70.000 .5230 .2960 .1884 .1360  
90.000 .6922 .3157 .1979 .1574  
120.000 .4999 .3279 .2250 .2594  
140.000 .4177 .2960 .2074 .2718  
150.000  
151.000  
162.000  
165.000  
169.000  
174.000  
180.000  
-.0948  
-.1074  
-.0936  
-.0106  
-.0013  
-.0222  
-.2078  
-.6095  
-.1047  
-.1181  
-.1300  
-.1087  
-.1281  
-.1975  
-.2525  
-.3477  
-.4460  
-.9615  
-.4205  
-.0072  
-.0202  
-.0681  
-.0598  
-.0281  
-.0167  
-.0579  
-.0072  
-.0202  
-.0066.2772  
.3053

.6398

.7469

.5401

X/LB 1.2035 .5774 .3360 .2457 .1838 .2627 .7469 .5401  
.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

## PHI

.000 .0568 .0045 -.0722 -.2022 -.2699 -.2183 -.0122  
40.000 .0361 -.0527 -.1876 -.2436 -.2436 -.2235 -.1105  
70.000 -.2111 -.4351 -.1277 -.0356 -.0356 -.0427  
90.000 -.1653 -.3441 .0091 .1558 -.0834 -.0532 -.1053  
105.000 .1020 .1682 -.1829 -.1088 -.1456  
110.000  
120.000 -.1840 -.1551 .2232 .1630 -.3191 -.1716 -.1501  
135.000 .2665 .2303 -.2925 -.1489 -.1691  
150.000 -.0805 .0076 .2511 .1685 -.2295 -.1316 -.1788  
165.000 -.0634 .2201 .2201 .0288 -.1167 -.3035  
180.000 -.0654 .0107 .1968 .3441

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## TABULATED PRESSURE DATA - 0A148 ( AXES 11-073-1 )

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ALPHA ( 3 ) = 3.896 BETA ( 2 ) = .152 MACH = .98833 Q = 598.89 P = 1060.2 RV/L = 3.5704  
(XE8804)

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB	PHI	.0000	.0080	.0230	.0460	.0700	.1120	.1580	.1660	.1770	.2040	.2510	.3010	.3780	.4970	.5740
20.000	1.2100	.6747	.2192	.0914	-.0102	-.0817	-.0867	-.1031	-.1217	-.1382	-.0583	.0016	.0620	.0811		
40.000			.3452	.1267	.0313	-.0183	-.0914	-.1422	-.2042	-.0415	.0143	.0517	.1084			
55.000			.3942	.1835	.0936	.0254	-.0755	-.2076	-.6688	-.1513	-.0427	.0033	.0058			
70.000			.4026	.1875	.0900	.0568	-.0738	-.3083	-.7323	-.1783	-.0298	.0058				
90.000		.5452	.4156	.2019	.0950	.0788	-.0581	-.3913	-.7115	-.2871	-.0240	-.0136				
120.000			.4187	.2512	.1503	.1968	.1198	-.5182	-.8918	-.10528	-.3834	.0382	.0021			
140.000							.5260	.1875								
150.000			.3856	.2755	.1806	.2480	.6072	.2416								
162.000																
165.000																
169.000																
174.000																
180.000																

X/LB

PHI

X/LB	PHI	.0000	.0080	.0230	.0460	.0700	.1120	.1580	.1660	.1770	.2040	.2510	.3010	.3780	.4970	.5740
20.000	1.1935	.6510	.2050	.0814	-.0237	-.0678	-.0989	-.1168	-.1317	-.1333	-.0664	.0057	.0676	.0738		
40.000			.2012	.0756	-.0270	-.0678	-.1072	-.1317	-.1459	-.2133	-.0980	.0083	.0459	.1083		
55.000			.2538	.0675	-.0106	-.0449	-.1024	-.1459	-.2059	-.2133	-.0980	.0083	.0459	.1083		
70.000			.2708	.0806	.0113	-.0307	-.1262	-.2059	-.2600	-.7217	-.1431	-.0302	.0050	.0108		
90.000		.3783	.2780	.0766	-.0018	-.0107	-.1341	-.2600	-.4014	-.7906	-.1679	-.0097	.0108			
120.000			.3003	.0823	.0018	.0000	-.1314	-.4014	-.5218	-.7729	-.2932	.0188	.0042			
150.000			.3260	.1635	.0673	.1241	.0176									

X/LB

PHI

X/LB	PHI	.0000	.0080	.0230	.0460	.0700	.1120	.1580	.1660	.1770	.2040	.2510	.3010	.3780	.4970	.5740
20.000	1.1935	.6510	.2050	.0814	-.0237	-.0678	-.0989	-.1168	-.1317	-.1333	-.0664	.0057	.0676	.0738		
40.000			.2012	.0756	-.0270	-.0678	-.1072	-.1317	-.1459	-.2133	-.0980	.0083	.0459	.1083		
55.000			.2538	.0675	-.0106	-.0449	-.1024	-.1459	-.2059	-.2133	-.0980	.0083	.0459	.1083		
70.000			.2708	.0806	.0113	-.0307	-.1262	-.2059	-.2600	-.7217	-.1431	-.0302	.0050	.0108		
90.000		.3783	.2780	.0766	-.0018	-.0107	-.1341	-.2600	-.4014	-.7906	-.1679	-.0097	.0108			
120.000			.3003	.0823	.0018	.0000	-.1314	-.4014	-.5218	-.7729	-.2932	.0188	.0042			
150.000			.3260	.1635	.0673	.1241	.0176									

ALPHA ( 3 ) = 3.899 BETA ( 3 ) = .4208 MACH = .98833 Q = 598.89 P = 1060.2 RV/L = 3.5704

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XE8804)

ALPHA ( 3 ) = 3.899 BETA ( 3 ) = 4.208

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB	.0000	.0080	.0230	.0460	.0700	.1120	.1580	.1680	.1770	.2040	.2510	.3010	.3780	.4970	.5740
PHI															
140.000															
150.000															
151.000															
162.000															
165.000															
169.000															
174.000															
180.000															

X/LB	.0520	.7290	.7790	.8210	.8780	.9210	.9600	.9990	1.0180	1.0480
PHI										
40.000										
70.000										
90.000										
105.000										
110.000										
120.000										
135.000										
150.000										
165.000										
180.000										

X/LB	.0520	.0047	-.0716	-.2077	-.2461	-.2146	-.0110
PHI							
40.000							
70.000							
90.000							
105.000							
110.000							
120.000							
135.000							
150.000							
165.000							
180.000							

ALPHA ( 4 ) = 7.895 BETA ( 1 ) = -3.903 MACH = .89900 Q = 589.51 P = 1059.7 RN/L = 3.5708

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB	.0000	.0080	.0230	.0460	.0700	.1120	.1580	.1680	.1770	.2040	.2510	.3010	.3780	.4970	.5740
PHI															
20.000															
40.000															
55.000															
70.000															
90.000															
120.000															
140.000															
151.000															
165.000															
169.000															
174.000															

.7016

.6025

.2541

.2703

-1.0273 - .6443 - .5006 - .0565 - .0245

- .3769 - .4842 - .6424 - .4956 - .1229 - .0325

- .2582 - .6544 - .5573 - .2469 - .1552

- .1708 - .6115 - .2541 - .1020 - .0158

- .0984 - .4989 - .1976 - .0872 - .0013

- .0579 - .0720 - .0003 - .0603 - .1158

- .0409 - .0361 - .0720 - .0003 - .0603

- .0387 - .0579 - .0199 - .0380 - .1153

- .0137 - .0102 - .0195 - .0378 - .1421

- .0102 - .0195 - .0378 - .1421 - .1792

- .0102 - .0195 - .0378 - .1421 - .1792

DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( WES 11-073-1 )

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ANES 11-073(0A148) -140 1/8 C/R ORB FUSELAGE

(XEB004)

ALPHA ( 4 ) = 7.895 BETA ( 1 ) = -3.903

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE : P

X/LB	.0000	.0080	.0230	.0450	.0700	.1120	.1480	.1860	.1770	.2040	.2510	.3010	.3780	.4870	.5740
PHI															
180.000	1.1663	.4205	.2145	.1449	.0983	.2012		.4978		-.9482	-.6549	-.4904	-.1189	.0002	

X/LB	.6520	.7290	.7790	.8210	.8790	.9210	.9400	.9880	1.0180	1.0460
PHI										
180.000	.1325	.0821	.0000	-.1199	-.1923	-.2529	-.0 64	.3922	.1354	.0572
40.000	.1373	.0255	-.1027	-.1966	-.2515	-.1 14		.2581		
70.000	-.3115	-.5687	-.1099	.0972	-.0900	-.0473	-.0 13			
90.000	-.2565	-.4699	-.0370	.0774	-.1108	-.1113	-.1 31			
105.000		.0651		.0884	-.1958	-.1556	-.1 77			
110.000										
120.000	-.2990	-.2393	.1004	.0834	-.3024	-.2157	-.1 105			
135.000		.1078	.1969	.1969	-.3261	-.1926	-.1 175			
150.000	-.1523	-.1049	.0999	.2608	-.2644	-.1674	-.2 105			
165.000	-.1285	.0951		-.0373	-.1450	-.2 183				
180.000	-.1139	-.0682	.1011	.3296						

ALPHA ( 4 ) = 7.900 BETA ( 2 ) = .140 MACH = .89100 Q = 599.51 P = 1059.7 RW/L = 3.5708

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE : P

X/LB	.0000	.0080	.0230	.0460	.0700	.1120	.1480	.1860	.1770	.2040	.2510	.3010	.3780	.4870	.5740
PHI															
180.000	1.1775	.8103	.3655	.2047	.0962			-.0130	-.0373	-.0663	-.0155	.0461	.1165	.1442	
20.000		.3806	.3806	.2171	.1015	.0265		-.0169	-.0481	-.0828	-.0484	.0478	.0978	.1747	
40.000		.4450	.2285	.2285	.1310	.0600		-.0016	-.0371	-.1178	-.0913	-.0943	-.0213		
55.000		.4292	.2259	.2259	.1296	.0602		-.0390	-.1611	-.5913	-.2231	-.0943	-.0213		
70.000		.3962	.1952	.1952	.0977	.0730		-.0245	-.2553	-.7039	-.2510	-.0652	-.0187		
90.000	.4920	.3813	.1895	.1895	.0898	.0658		-.1362	-.3643	-.7204	-.3349	-.1148	-.0569		
120.000		.3380	.1862	.1862	.0965	.1683			-.5076	-.6459	-.4653	-.0197	-.0144		
140.000		.2762	.1857	.1857	.0998	.1973			.1740	-.6454	-.4653	-.0197	-.0144		
150.000									.2094	-.1 0405	-.6586	-.4486	.0271	.0052	
162.000															
169.000															
174.000															
180.000	1.1775	.4206	.2425	.1805	.1086	.2161	.6 27	.5393		-.1 1414	-.6611	-.3482	.0175	.0039	

X/LB	.6520	.7290	.7790	.8210	.8790	.9210	.9400	.9880	1.0180	1.0460
PHI										
180.000	.1349	.0849	-.0020	-.1217	-.1880	-.2523	-.0 83	.3906	.1336	.0288
40.000	.1401	.0189	-.1023	-.2056	-.2233	-.0 62		.2434		

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB804)

ALPHA ( 4 ) = 7.900 BETA ( 2 ) = .140

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

70.000 -.3133 -.6112 -.1825 .0250 -.1778 -.1173 -.1151  
 90.000 -.2549 -.4724 -.1053 .0242 -.2571 -.1621 -.1528  
 105.000 .0027 .0027 .0183 -.3579 -.2094 -.2018  
 110.000  
 120.000 -.1952 -.2353 .0233 .1004 -.4737 -.2702 -.2282  
 135.000 .0911 .3056 -.4214 -.2631 -.2398  
 150.000 -.1309 -.1211 .1132 .4099 -.3314 -.2772 -.2346  
 165.000 -.1128 .1253 .1431 -.2593 -.2790  
 180.000 -.1078 -.0660 .1395 .4221  
 -.3310  
 -.2655

ALPHA ( 4 ) = 7.897 BETA ( 3 ) = 4.209 MACH = .69900 Q = 599.51 P = 1059.7 RN/L = 3.5708

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1650 .1770 .2040 .2510 .3010 .3780 .4570 .5740

PHI

.000 1.1563 .7921 .3471 .2027 .0818 .0062  
 20.000 .3306 .1806 .0727 .0062  
 40.000 .3371 .1632 .0177  
 55.000 .3006 .1145 .0293 .0247  
 70.000 .2732 .0890 .0012 .0056  
 90.000 .2686 .0880 .0002 .0194  
 120.000 .2609 .1116 .0291 .1188  
 140.000 .2338 .1515 .0630 .1660  
 150.000  
 165.000  
 169.000  
 174.000  
 180.000  
 1.1563 .3901 .2345 .1531 .0992 .2008 .6255  
 .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460  
 -.0164  
 -.0333  
 -.0402  
 -.1036  
 -.1043  
 -.0924  
 .0499  
 .4164  
 .0723  
 .1253  
 .5203  
 .5270  
 .5203  
 .5270  
 .9990 1.0180 1.0460  
 -.0374  
 -.0615  
 -.0957  
 -.1625  
 -.2105  
 -.3313  
 -.4714  
 -.6438  
 -1.0152  
 -1.0413  
 -1.1608  
 -1.1608  
 -1.0413  
 -1.0460  
 -.0577  
 -.0208  
 -.1569  
 -.1080  
 -.6498  
 -.7631  
 -.7411  
 -.6861  
 -.4075  
 -.0035  
 -.0072  
 -.0493  
 .0253  
 .0859  
 -.0897  
 -.0695  
 -.0662  
 -.0035  
 .0182  
 -.0510  
 -.0844  
 .1255  
 .0859  
 -.0315  
 -.0267  
 -.0175  
 .1380  
 .1622

X/LB

PHI

.000 .1311 .0884 .0110 -.1262 -.1948 -.2456 -.0157  
 40.000 .1375 .0260 .0260 -.1066 -.2171 -.2219 -.0547  
 70.000 .3029 -.5879 -.2182 -.0521 -.2664 -.1842 -.1507  
 90.000 .2332 -.4292 .1650 .0517 .3453 .2355 .1820  
 105.000 .0927 .0528 .4679 .3019 .2282  
 110.000  
 120.000 -.1605 -.2175 -.0568 .0185 .5442 .5131 .2755  
 135.000 .0635 .2830 .4459 .4065 .2579  
 150.000 -.1010 -.0810 .0956 .3450 .3913 .4650 .2628

DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBBON)

ALPHA ( 4 ) = 7.897 BETA ( 3 ) = 4.209

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB	.6520	.7290	.7790	.8210	.8790	.9210	.9600	.9990	1.0180	1.0460
PHI										
165.000	-.0934		.1139							
180.000	-.1238	-.0827	.1027	.3470						

ALPHA ( 5 ) = 11.985 BETA ( 1 ) = -3.890 MACH = .89830 Q = 598.10 P = 1060.7 RAYL = 3.5735

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB	.0000	.0080	.0230	.0460	.0700	.1120	.1580	.1660	.1770	.2040	.2510	.3010	.3780	.4970	.5740
PHI															
.000	1.1023	.9272	.5036	.3249	.2057			.0690	.0536	.0280	.0452	.1036	.1816	.2165	
20.000			.5506	.3635	.2247	.1354		.0789	.0512			.0512			
40.000			.6183	.3973	.2825	.1963		.1103	.0562	.0141	.0673	.1210	.1794	.2624	
55.000			.5692	.3625	.2495	.1460		.0521	-.0194						
70.000			.4885	.2944	.1792	.1481		.0468	-.0578	-.4252	-.2138	-.1487	-.0368		
90.000		.5616	.4252	.2478	.1621	.1346		.0533	-.1381	.5522	-.2487	-.1758	-.0633		
120.000			.2937	.1445	.0543	.1353		.1831	-.2515	-.6657	-.5184	-.4186	-.2637		
140.000									-.3771						
150.000			.1611	.0813	.0126	.1360		.5613	-.5286	-.5755	-.5070	-.2433	-.0672		
151.000									.2344						
162.000									.2354						
165.000								.5641		-.8176	-.5716	-.5553	-.2281	-.0476	
169.000															
174.000								.6240							
180.000	1.1023	.2522	.0952	.0612	.0117	.1448		.4557	-.7085	-.6179	-.5486	-.2352	-.0081		

X/LB	.6520	.7290	.7790	.8210	.8790	.9210	.9600	.9990	1.0180	1.0460
PHI										
.000	.2174	.1623	.0788	-.0523	-.1486	-.2818	-.0447		.4205	.1384
40.000	.2426		.1077	-.0238	-.1888	-.2352	-.1289		.2755	.0414
70.000	-.4498	-.7309	-.1639	-.0068	-.2564	-.1635	-.1325			
90.000	-.3461	-.5785	-.0445	.0300	-.2663	-.2182	-.1821			
105.000			-.0052	.0788	-.3302	-.2626	-.2351			
110.000										
120.000	-.3725	-.2601	.0030	.1269	-.3775	-.2837	-.2344			
135.000			.0161	.1915	-.3725	-.2704	-.2528			
150.000	-.2489	-.2264	-.0182	.2809	-.3268	-.2643	-.2671			
165.000	-.2069		.0551		-.1139	-.2005	-.3022			
180.000	-.1642	-.1282	.0551							

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## TABULATED PRESSURE DATA - 0A148 ( ANES 11-073-1 )

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ALPHA ( 5 ) = 11.993 BETA ( 2 ) = .152 MACH = .99830 Q = 599.10 P = 1060.7 RN/L = 3.5735  
(XEB804)

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB	.0000	.0080	.0230	.0460	.0700	.1120	.1560	.1660	.1770	.2040	.2510	.3010	.3780	.4970	.5740
PHI															
20.000	1.1104	.9370	.5065	.3261	.2090			.0742	.0444	.0242	.0517	.1022	.1842	.2087	
40.000			.5185	.3341	.2135	.1195		.0704	.0350	.0007					
55.000			.5237	.3293	.2187	.1296		.0704			.0123	.0809	.1541	.2348	
70.000			.4368	.2378	.1403	.0478		.0325	.0994	.0576					
90.000		.4112	.3620	.1813	.0769	.0698		.0211	.1358	.5325	.2519	.1875	.0891		
120.000			.3205	.1482	.0876	.0706		.0092	.2193	.6546	.2760	.1930	.0738		
140.000			.2406	.0931	.0161	.1207		.1355	.3470	.7422	.4374	.3010	.1370		
150.000									.5018						
162.000			.1542	.0864	.0025	.1371		.4770	.7265	.6035	.5171	.2002	.0492		
165.000									.1600						
169.000									.1755						
174.000															
180.000															
180.000	1.1104	.2434	.1127	.0649	.0268	.1538	.6117	.5149							
X/LB	.6520	.7290	.7790	.8210	.8790	.9210	.9600	.9990	1.0180	1.0460					
PHI															
40.000	.2140	.1623	.6773	.0544	.1407	.2943	.0426		.4168	.1419					
70.000	.2325	.1006	.1006	.0324	.1879	.2538	.1086		.2564	.0231					
90.000	.4752	.7436	.2199	.0909	.3185	.2803	.1754								
105.000	.3542	.5976	.1237	.0551	.3465	.2933	.1997								
110.000			.0335	.0095	.4460	.4776	.2254								
120.000	.2754	.2993	.0203	.0795	.4539	.4812	.2294	.3456							
135.000			.0101	.2292	.4266	.4157	.2658	.2816							
150.000	.2085	.2114	.0299	.3741	.3683	.3853	.2638								
165.000	.1602	.0757			.1509	.3079	.2920								
180.000	.1474	.1194	.0815	.3606											

ALPHA ( 5 ) = 11.982 BETA ( 3 ) = .4222 MACH = .99830 Q = 599.10 P = 1060.7 RN/L = 3.5735

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB	.0000	.0080	.0230	.0460	.0700	.1120	.1580	.1660	.1770	.2040	.2510	.3010	.3780	.4970	.5740
PHI															
20.000	1.0948	.9168	.4908	.3195	.1902			.0641	.0329	.0370	.0437	.1065	.1791	.2048	
40.000			.4632	.2907	.1721	.0965		.0378	.0083						
55.000			.4063	.2474	.1395	.0624		.0751	.0605	.1137	.0876	.0338	.1205	.2172	
70.000			.3016	.1139	.0221	.0465		.1128	.1573						
90.000			.2400	.0635	.0224	.0094		.0891	.1791	.5914	.3591	.2251	.1234		
120.000		.2494	.2176	.0508	.0044	.0158		.0691	.2771	.7218	.2491	.1800	.0868		
			.1707	.0374	.0270	.0861		.0744	.4359	.6997	.3570	.2146	.0621		



**DATE 10 FEB 76**

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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**PAGE**

AMES 11-073(QA148) -140A/B/C/R ORB FUSELAGE

( 52 017 50 ) (50883X)

## REFERENCE DATA

•	2690.0000	50.FT.	•	1076.6900	IN. X0
•	474.8000	IN.	•	0.0000	IN. Y0
•	936.0680	IN.	•	375.0000	IN. Z0
•	.0300				

BOER =	.000	SPOBRX =	.55 .000
BOFLAP =	16.300	L-ELVN =	.000
R-ELVN =	.000	MACH =	.500

## PARAMETRIC DATA

ALPHA ( 1 ) = -3.996    BETA ( 1 ) = -7.693    MACH = .59580    Q = 593.15    P = 2387.2    RN/L = 4.8118

## SECTION ( ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

[illegible]

PHI	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
0.000	-.1105	-.1302	-.1673	-.2112	-.2714	-.3575	-.4734				
40.000	-.2066	-.2774	-.3774	-.5032	-.6577	-.8436	-.1046				
80.000	-.0195	.0071	.0830	.1683	.2439	.3208	.4060				
90.000	.0562	.0511	.1305	.2342	.3518	.4839	.6255				
05.000			.1806	.3424	.5082	.6742	.8479				
10.000			.2511	.5071	.7259	.9074	1.0582				
20.000	.0420	.0974	.2914	.4832	.6877	.8991	1.0457				
35.000	.0260	.0949	.2707	.4370	.6086	.7822	0.9266				
65.000	.0102		.2233		.6176						
80.000	-.0074	.0449	.1695	.3223							

DATE 10 FEB 76 TABULATED PRESSURE DATA - 0A148 ( WES 11-073-1 )

(XEB005)

WES 11-073(0A148) -1401/B/C/R ORB FUSELAGE

ALPHA ( 1 ) = -3.981 BETA ( 2 ) = -3.877 MACH = .59380 Q = 593.15 P = 2387.2 RW/L = 4.8118

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB	0.0000	0.0080	0.0230	0.0460	0.0700	0.1120	0.1580	0.1660	0.1770	0.2040	0.2510	0.3010	0.3780	0.4970	0.5740
PHI	0.000	1.0588	0.1806	-0.1746	-0.1866	-0.2183	-0.2355	-0.1966	-0.1308	-0.1050	-0.0781	-0.0533	-0.0420	-0.0551	
20.000			-0.1642	-0.1969	-0.2408	-0.2355	-0.1966	-0.1637	-0.1637	-0.2006	-0.1320	-0.1191	-0.0988	-0.0689	
40.000			0.0198	-0.1957	-0.2583	-0.2548	-0.2561	-0.1934	-0.1834	-0.1762	-0.0379	0.0348	0.0792	0.0688	
60.000			0.2134	0.0077	-0.0583	-0.1353	-0.1772	-0.1823	-0.1823	-0.2120	-0.0698	0.0146	0.0688	0.0433	
80.000			0.3463	0.1370	0.0573	0.0035	-0.1080	-0.2670	-0.2335	-0.2282	-0.1977	-0.0041	0.0433		
100.000		0.6130	0.4373	0.2213	0.1394	0.0452	-0.0969	-0.2612	-0.4078	-0.2689	-0.0852	-0.0194	0.0224		
120.000			0.5362	0.3280	0.2602	0.2518	0.0874	-0.4078	-0.4078	-0.2689	-0.0852	-0.0194	0.0224		
140.000			0.5515	0.4195	0.3293	0.3282	0.5070	0.1580	0.1580	-0.2074	-0.0665	-0.0238	0.0166		
160.000								0.5638	-0.9289	-0.2074	-0.0665	-0.0238	0.0166		
180.000	1.0588	0.7371	0.4870	0.3899	0.3078	0.3239	0.6461	0.4698	-0.1498	-0.1939	-0.0933	-0.0319	0.0078		
X/LB	0.6520	0.7290	0.7790	0.8210	0.8796	0.9210	0.9000	0.9990	1.0180	1.0460					

PHI	0.000	-0.1035	-0.1286	-0.1624	-0.2140	-0.1711	-0.1538	-0.0428	0.2457	0.0184					
40.000		-0.1742	-0.0265	-0.1749	-0.2159	-0.1656	-0.1280	-0.0072	0.1439	-0.0384					
60.000		0.0225	-0.0265	0.0385	0.1350	-0.0071	-0.0223	-0.0193							
80.000		0.0286	0.0202	0.0323	0.1715	-0.0582	-0.0801	-0.1426							
100.000				0.1461	0.2323	-0.1649	-0.1400	-0.1128	-0.3133						
120.000		0.0498	0.0912	0.2278	0.3703	-0.2178	-0.1812	-0.2112	-0.2478						
140.000				0.2893	0.4384	-0.1958	-0.1099	-0.1191							
160.000		0.0576	0.1171	0.2878	0.4145	-0.1013	-0.0854	-0.1507							
180.000	0.0488	0.0990	0.2563	0.4488	0.7442	-0.0898	-0.2722								
	0.0398		0.2599	0.4488											

ALPHA ( 1 ) = -3.973 BETA ( 3 ) = .156 MACH = .59380 Q = 593.15 P = 2387.2 RW/L = 4.8118

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB	0.0000	0.0080	0.0230	0.0460	0.0700	0.1120	0.1580	0.1660	0.1770	0.2040	0.2510	0.3010	0.3780	0.4970	0.5740
PHI	0.000	1.0659	0.1836	-0.1725	-0.1804	-0.2148	-0.2128	-0.1990	-0.1272	-0.0999	-0.0717	-0.0521	-0.0384	-0.0622	
20.000			-0.1572	-0.1792	-0.2234	-0.2128	-0.1762	-0.1422	-0.1422	-0.2126	-0.1473	-0.0893	-0.0706	-0.0718	
40.000			0.0132	-0.1838	-0.2294	-0.2221	-0.2434	-0.1924	-0.2251	-0.2126	-0.1473	-0.0893	-0.0706	-0.0718	
60.000			0.1313	-0.0548	-0.1038	-0.1859	-0.2024	-0.1755	-0.2251	-0.2435	-0.2116	-0.0646	0.0098	0.0612	
80.000			0.2347	0.0350	0.0329	0.0662	-0.1755	-0.3598	-0.3598	-0.2631	-0.1035	-0.0108	0.0485	0.0485	
100.000		0.4544	0.3142	0.0982	0.0194	-0.0549	-0.0549	-0.1937	-0.3458	-0.2817	-0.2469	-0.0346	0.0194		
120.000			0.4246	0.2572	0.1529	0.1414	-0.0451	-0.0451	-0.3458	-0.2817	-0.2469	-0.0346	0.0194		

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB03)

ALPHA ( 1 ) = -3.973 BETA ( 3 ) = .156

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1860 .1770 .2040 .2510 .3010 .3780 .4570 .5740

PHI

140.000  
150.000  
151.000  
162.000  
165.000  
169.000  
174.000  
180.000

1.0559 .7323 .4981 .4014 .3290 .3320 .6814 .5173 .5252 .4173 .0412 .1016  
-.1078 -.1291 -.1658 -.2177 -.1724 -.1558 -.0483  
-.1553 -.1713 -.2129 -.2173 -.1866 -.1372 -.0836  
-.0249 -.0527 .0035 .0902 -.0500 -.0555 -.1168  
.0040 -.0082 .0561 .1029 .1223 -.1153 -.1639  
105.000 .0967 .1298 -.2386 -.1800 -.2117  
110.000  
120.000 .0285 .0535 .1623 .2348 -.3309 -.2666 -.2745  
135.000 .2449 .4687 -.2432 -.1710 -.2203  
150.000 .0532 .1086 .2620 .4898 -.1746 -.1680 -.1959  
165.000 .0515 .2535  
180.000 .0581 .1191 .2581 .5114

X/LB

PHI

40.000  
70.000  
90.000  
105.000  
110.000  
120.000  
135.000  
150.000  
165.000  
180.000

1.0559 .7323 .4981 .4014 .3290 .3320 .6814 .5173 .5252 .4173 .0412 .1016  
-.1078 -.1291 -.1658 -.2177 -.1724 -.1558 -.0483  
-.1553 -.1713 -.2129 -.2173 -.1866 -.1372 -.0836  
-.0249 -.0527 .0035 .0902 -.0500 -.0555 -.1168  
.0040 -.0082 .0561 .1029 .1223 -.1153 -.1639  
105.000 .0967 .1298 -.2386 -.1800 -.2117  
110.000  
120.000 .0285 .0535 .1623 .2348 -.3309 -.2666 -.2745  
135.000 .2449 .4687 -.2432 -.1710 -.2203  
150.000 .0532 .1086 .2620 .4898 -.1746 -.1680 -.1959  
165.000 .0515 .2535  
180.000 .0581 .1191 .2581 .5114

ALPHA ( 1 ) = -3.981 BETA ( 4 ) = 4.231 MACH = .59587 0 = 593.15 P = 2387.2 RW/L = 4.8118

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0060 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4570 .5740

PHI

20.000  
40.000  
55.000  
70.000  
90.000  
120.000  
140.000  
150.000  
151.000  
162.000  
165.000  
169.000  
174.000

1.0438 .1567 .1881 .1816 .2278 .2292 .1984  
-.1772 .0714 .1967 .2290 .2290 .1969  
-.0331 .1246 .1568 .1911  
1071 .0668 .1207 .1353  
2830 .1789 .0310 .1164 .1500  
3016 .1328 .0212 .0216  
4105 .3120 .2172 .2044  
4105 .3120 .2172 .2044  
150.000  
151.000  
162.000  
165.000  
169.000  
174.000

1.0438 .1567 .1881 .1816 .2278 .2292 .1984  
-.1772 .0714 .1967 .2290 .2290 .1969  
-.0331 .1246 .1568 .1911  
1071 .0668 .1207 .1353  
2830 .1789 .0310 .1164 .1500  
3016 .1328 .0212 .0216  
4105 .3120 .2172 .2044  
4105 .3120 .2172 .2044  
150.000  
151.000  
162.000  
165.000  
169.000  
174.000

.6157

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8805)

ALPHA ( 1 ) = -3.981 BETA ( 4 ) = 4.231

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB	PHI	0.000	0.080	0.230	0.460	0.700	1.120	1.580	1.660	1.770	2.040	2.510	3.010	3.780	4.870	5.740
180.000	1.0438	.6988	.4917	.3941	.3130	.3213	.4927	-1.1165	-1.1852	-0.9824	-0.0287	.0088				
X/LB	PHI	.6520	.7290	.7790	.8210	.8790	.9210	.9600	.9990	1.0120	1.0460					
PHI	.000	-0.0993	-0.1225	-0.1651	-0.2192	-0.1760	-0.1589	-0.0487	.2326	.0107						
40.000	-0.1290	-0.1567	-0.2047	-0.1907	-0.1357	-0.0742			.1381	-0.0537						
70.000	-0.0400	-0.0814	-0.0352	0.0418	-0.0960	-0.0871	-0.1305									
90.000	-0.0056	-0.0343	0.0085	0.0433	-0.1690	-0.1552	-0.1817									
105.000		0.0464	-0.0454	-0.3074	-0.2234	-0.2363										
110.000							-0.3230									
120.000	-0.0095	-0.0074	0.0682	0.0887	-0.4556	-0.3572	-0.3340									
135.000		0.1777	0.3092	-0.3648	-0.2644	-0.2776										
150.000	0.0267	0.0669	0.1991	0.4780	-0.2886	-0.2626	-0.2439									
165.000	0.0315	0.2092			-0.1435	-0.2713	-0.2066									
180.000	0.0395	0.0993	0.2368	0.4809												

ALPHA ( 1 ) = -3.995 BETA ( 5 ) = 8.308 MACH = .59580 Q = 593.15 P = 2387.2 RN/L = 4.8118

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB	PHI	0.000	0.080	0.230	0.460	0.700	1.120	1.580	1.660	1.770	2.040	2.510	3.010	3.780	4.870	5.740
PHI	.000	.9976	.1397	-0.2062	-0.1974	-0.2489			-0.1791	-0.1597	-0.1232	-0.0915	-0.0713	-0.0600	-0.0773	
20.000	-0.1999	-0.1922	-0.2335	-0.2018					-0.1757	-0.1522	-0.1125	-0.0600	-0.0329	-0.0438	-0.0313	
40.000	-0.1236	-0.2124	-0.2294	-0.1955	-0.2098				-0.1891	-0.1717	-0.2445	-0.2537	-0.0994	-0.0154	.0331	
55.000	-0.0480	-0.1713	-0.1958	-0.2098	-0.1894				-0.2374	-0.3206	-0.3223	-0.1316	-0.0355	.0213	.0547	
70.000	0.0200	-0.1528	-0.1898	-0.2247	-0.1021				-0.2731	-0.4965	-0.5451	-0.3931	-0.3444	-0.1218	-0.0547	
90.000	0.0345	-0.1396	-0.1970	-0.1021					-0.3331	-0.5163	-0.6294	-0.2728	-0.1494	-0.1030	-0.0658	
120.000	0.1650	-0.0046	-0.1132	-0.1074					.1481	-0.2587						
150.000	0.2975	0.2216	0.1181							-0.1656						
162.000											-0.9912	-0.2367	-0.1503	-0.0891	-0.0526	
165.000																
169.000																
174.000																
180.000	.9976	.6339	.4417	.3340	.2669	.2779	.5474		.3761							
X/LB	PHI	.6520	.7290	.7790	.8210	.8790	.9210	.9600	.9990	1.0180	1.0460					
PHI	.000	-0.1167	-0.1366	-0.1709	-0.2191	-0.1789	-0.1568	-0.0480	.2305	.0020						
40.000	-0.1181	-0.1577	-0.1982	-0.1880	-0.1322	-0.0629			.1166	-0.0733						

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TABULATED PRESSURE DATA - 0A148 ( APES 11-073-1 )

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(XE8805)

APES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 1 ) = -3.985 BETA ( 5 ) = 8.308

SECTION ( 1 ) ORBITER FUSELAGE		DEPENDENT VARIABLE CP				
X/LB		.6520	.7290	.7790	.8210	.8790 .9210 .9600 .9990 1.0180 1.0460
PHI						
70.000		-.0613	-.1089	-.0785	.0052	-.1335 -.1068 -.1377
90.000		-.0327	-.0733	-.0545	-.0099	-.1722 -.1891
105.000			-.0081		.0129	-.3502 -.2497 -.2415
110.000						-.3016
120.000		-.0432	-.0605	-.0232	-.1154	-.5897 -.4451 -.3889
135.000				.0695	.1696	-.4928 -.3508 -.3277
150.000		-.0368	-.0116	.1066	.4534	-.4429 -.3828 -.2934
165.000		-.0318		.1277	-.2771	-.3643 -.2800
180.000		-.0208	.0376	.1722	.3770	

ALPHA ( 2 ) = -.001 BETA ( 1 ) = -7.930 MACH = .59552 Q = 592.56 P = 2387.2 RN/L = 4.8092

SECTION ( 1 ) ORBITER FUSELAGE		DEPENDENT VARIABLE CP				
X/LB		.0000	.0080	.0230	.460	.0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740
PHI						
.000	1.0431	.3286	-.0650	-.1206	-.1609	-.1372
20.000			-.0169	-.0956	-.1722	-.1720
40.000			.2090	-.1275	-.1590	-.2253
55.000			.4106	.1890	.1120	-.0426
70.000			.5054	.2932	.1988	.0052
90.000	.7410		.5599	.3495	.2433	.0247
120.000			.5578	.4002	.2940	.1784
140.000			.4620	.3241	.2557	.5211
150.000					.2671	.1904
162.000						.1779
169.000					.5161	
174.000					.5612	
180.000	1.0431	.5926	.3312	.2507	.1863	.2112
X/LB	.6520	.7290	.7790	.8210	.8790	.9210 .9600 .9990 1.0180 1.0460
PHI						
.000	-.0541	-.0808	-.1286	-.1787	-.1525	-.1472 -.0397
40.000	-.1084		-.1315	-.1809	-.1667	-.1141 -.0972
70.000	-.0839	-.0673	.0405	.1829	.0413	.0242 -.0649
90.000	-.0409	-.0184	.0918	.2295	.0034	-.0386 -.1244
105.000			.1461	.3530	-.0759	-.0929 -.1698
110.000						-.3059
120.000	-.0688	.0101	.2000	.5059	-.1479	-.1184 -.1523
135.000			.2395	.4423	-.1436	-.0929 -.1378
150.000	-.0361	.0345	.2230	.2427	-.1373	-.0696 -.1449

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB805)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = -.001 BETA ( 1 ) = -7.930

SECTION ( 1 ) ORBITER FUSELAGE / DEPENDENT VARIABLE CP

X/LB	.6520	.7290	.7790	.8210	.8790	.9210	.9600	.9990	1.0180	1.0460
PHI										
165.000	-.0407	.1836		.1327	-.0331	-.2730				
180.000	-.0456	.0099	.1413	.2646						

ALPHA ( 2 ) = .008 BETA ( 2 ) = -3.896 MACH = .59552 Q = 592.56 P = 2387.2 RN/L = 4.8092

SECTION ( 1 ) ORBITER FUSELAGE / DEPENDENT VARIABLE CP

X/LB	.0000	.0080	.0230	.0460	.0700	.1120	.1580	.1660	.1770	.2040	.2510	.3780	.4970	.5740
PHI														
000	1.0800	.3657	-.0200	-.0245	-.1379	-.1629		-.1190	-.1019	-.0772	-.0514	-.0322	-.0060	-.0118
20.000		.0008	-.0038	-.0838	-.1427	-.1324		-.1442	-.1195	-.1137	-.0608	-.0394	-.0349	-.0253
40.000		.1752	-.0355	-.0355	-.1090	-.1324		-.1802	-.1637					
55.000		.3260	.1264	.0433	-.0239	-.0239		-.0882	-.1314					
70.000		.3969	.1897	.1046	.0566	-.0239		-.0702	-.1591	-.1770	-.0546	.0007	.0343	.0217
90.000		.4424	.2418	.1418	.0815	-.0609		-.0609	-.2348	-.2036	-.0853	-.0130	-.0132	
120.000		.4796	.3186	.2177	.2217			.0876	-.2589	-.2570	-.2210	-.0426	-.0132	
140.000		.4429	.3210	.2363	.2552			.4652	-.3345	-.3425	-.1302	-.0529	-.0207	
150.000								.1036	-.5015					
151.000								.1205						
162.000									-.1.0888	-.2529	-.1324	-.0536	-.0165	
165.000														
169.000														
174.000														
180.000														

SECTION ( 1 ) ORBITER FUSELAGE

SECTION ( 1 ) ORBITER FUSELAGE / DEPENDENT VARIABLE CP

SECTION ( 1 ) ORBITER FUSELAGE / DEPENDENT VARIABLE CP

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SECTION ( 1 ) ORBITER FUSELAGE / DEPENDENT VARIABLE CP

SECTION ( 1 ) ORBITER FUSELAGE / DEPENDENT VARIABLE CP





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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB803)

ALPHA ( 2 ) = .003 BETA ( 5 ) = 8.269

SECTION : 1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1680 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

180.000 1.0162 .5013 .3270 .2258 .1698 .1944 .3224 -1.2991 -.2708 -.1617 -.0993 -.0693

X/LB

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 -.0552 -.0808 -.1261 -.1691 -.1560 -.1529 -.0421 .2644 .0102  
40.000 -.0485 -.1110 -.1664 -.1780 -.1780 -.1278 -.0607 .1196 -.0646

70.000

-.1453 -.1797 -.1180 -.0205 -.1456 -.1148 -.1412

90.000

-.0959 -.1221 -.0660 -.0251 -.2224 -.2029 -.2093

105.000

-.0273 -.0285 -.3534 -.2577 -.2533

110.000

-.0676 -.0761 -.0115 -.1237 -.5656 -.4250 -.3576 -.3232

120.000

.0708 .0936 .3795 -.5124 -.3593 -.3257 -.3017

130.000

-.0502 -.0228 .0936 .3795 -.4840 -.3931 -.3190

145.000

-.0487 .1106 .3475 -.3916 -.2781

180.000

-.0558 .0063 .1449 .3111

ALPHA ( 3 ) = 3.907 BETA ( 1 ) = -7.936 MACH = .59500 Q = 591.74 P = 2387.9 RM/L = 4.8063

SECTION : 1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1680 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.0369 .4931 .0816 -.0101 -.0719 -.1034 -.0917 -.0762 -.0569 -.0368 -.0141 .0209 .0294

20.000

.1504 .0236 -.0572 -.1034 -.1001 -.0981

40.000

.3631 .1125 .0155 -.0285 -.0915 -.0508 -.0432 -.0088 .0109 .0142 .0371

55.000

.4962 .2866 .1971 .1077 .0271 .0359

70.000

.5296 .3307 .2270 .1562 .0288 -.0792 -.1316 -.0453 -.0091 .0056

90.000

.5332 .3355 .2342 .1684 .0403 .1423 -.1696 -.0801 -.0254 -.0113

120.000

.4641 .3149 .2146 .2219 .1469 .2097 -.2778 -.2969 -.1634 -.1561

140.000

.3281 .2139 .1519 .1849 .4706 -.3320

150.000

.1274 .0989 .1274 .0989

151.000

.151000

162.000

.162000

165.000

.165000

169.000

.169000

174.000

.174000

180.000

.180000

X/LB

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .0119 -.0267 -.0771 -.1400 -.1190 -.1301 -.0299 .2678 .0283

40.000

-.0087 -.0634 -.1330 -.1431 -.0690 -.0692 .1699 -.0192

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

(XEB805)

## DATE 10 FEB 76 TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 3 ) = 3.907 BETA ( 1 ) = -7.936

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI  
70.000 -.1925 -.1337 -.0001 .1765 .0461 .0319 -.0541  
90.000 -.1313 -.0631 .0589 .0131 -.0383 -.1249  
105.000 .1007 .3772 -.0611 -.0828 -.1717  
110.000  
120.000 -.1914 -.0743 .1423 .5249 -.1770 -.1357 -.1582  
135.000 .1897 .3796 -.1516 -.1289 -.1922  
150.000 .1877 .1160 -.2033 -.1001 -.1613  
165.000 -.0985 -.0111 .1877 .1160 -.2033 -.1001 -.1613  
180.000 -.0798 .1534 .0994 -.0572 -.2744  
180.000 -.0733 -.0108 .1167 .1774

-3081  
-2468

ALPHA ( 3 ) = 3.912 BETA ( 2 ) = -3.897 MACH = .59500 Q = 591.74 P = 2387.9 Rn/L = 4.8063

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4570 .5740  
PHI  
0.000 1.0723 .5315 .1233 .0144 -.0444 -.0771  
20.000 .1614 .0420 -.0422 -.0322  
40.000 .3178 .0985 .0139 -.0322  
55.000 .3969 .2079 .1282 .0438 .0757  
70.000 .4175 .2213 .1323 .0916  
90.000 .4272 .2359 .1414 .0916  
120.000 .4011 .2509 .1589 .1756  
140.000 .3204 .2160 .1367 .1823  
150.000  
162.000  
165.000  
169.000  
174.000  
180.000

PHI  
0.000 1.0723 .5315 .1233 .0144 -.0444 -.0771  
20.000 .1614 .0420 -.0422 -.0322  
40.000 .3178 .0985 .0139 -.0322  
55.000 .3969 .2079 .1282 .0438 .0757  
70.000 .4175 .2213 .1323 .0916  
90.000 .4272 .2359 .1414 .0916  
120.000 .4011 .2509 .1589 .1756  
140.000 .3204 .2160 .1367 .1823  
150.000  
162.000  
165.000  
169.000  
174.000  
180.000

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460  
PHI  
0.000 .0083 -.0220 -.0764 -.1343 -.1162 -.1251 -.0220  
40.000 .0305 -.0653 -.1294 -.1294 -.1442 -.0909 -.0808  
70.000 -.2319 -.1724 -.0519 .1207 -.0086 -.0110 -.0808  
90.000 -.1609 -.1224 .0184 .1624 .0542 -.0778 .1460  
105.000 .0762 .2519 .1432 .1330 .1956  
110.000  
120.000  
135.000  
150.000

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460  
PHI  
0.000 .0083 -.0220 -.0764 -.1343 -.1162 -.1251 -.0220  
40.000 .0305 -.0653 -.1294 -.1294 -.1442 -.0909 -.0808  
70.000 -.2319 -.1724 -.0519 .1207 -.0086 -.0110 -.0808  
90.000 -.1609 -.1224 .0184 .1624 .0542 -.0778 .1460  
105.000 .0762 .2519 .1432 .1330 .1956  
110.000  
120.000  
135.000  
150.000

PHI  
0.000 .0083 -.0220 -.0764 -.1343 -.1162 -.1251 -.0220  
40.000 .0305 -.0653 -.1294 -.1294 -.1442 -.0909 -.0808  
70.000 -.2319 -.1724 -.0519 .1207 -.0086 -.0110 -.0808  
90.000 -.1609 -.1224 .0184 .1624 .0542 -.0778 .1460  
105.000 .0762 .2519 .1432 .1330 .1956  
110.000  
120.000  
135.000  
150.000

DATE 10 FEB 76

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TABULATED PRESSURE DATA - 0A148 ( AXES 11-073-1 )

AXES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB805)

ALPHA ( 3 ) = 3.912 BETA ( 2 ) = -3.897

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 -.0379 .1941 .3104 -.0050 -.1388 -.2650

180.000

-.0279 .0401 .1725 .3104

ALPHA ( 3 ) =

3.909 BETA ( 3 ) =

.143 MACH = .99500 Q

= 591.74 P

= 2387.9

RV/L = 4.8063

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1680 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.0767 .5324 .1195 .0260 -.0445 -.0756 -.0876

20.000

.1422 .0423 .0433 -.0756 -.0746

40.000

.2428 .0572 -.0127 -.0393 -.0773

55.000

.2911 .1136 .0471 -.0224 -.0951

70.000

.2992 .1172 .0425 -.0029 -.1170

90.000

.3088 .1276 .0492 .0000 -.1211

120.000

.3164 .1713 .0868 .1098 -.0214

140.000

.2901 .1970 .1150 .1523 .3314

150.000

.0000 .0000 .0000 .0000 .0000

160.000

.0000 .0000 .0000 .0000 .0000

170.000

.0000 .0000 .0000 .0000 .0000

180.000

.0000 .0000 .0000 .0000 .0000

X/LB

.0000 .0000 .0000 .0000 .0000

PHI

.000 1.0757 .4569 .1763 .1326 .1797 .5717

40.000

.0072 .0607 .1292 .1533 .1028 .0324

70.000

.2422 .0811 .0588 .0697 .0599 .0657

90.000

.1723 .0157 .0731 .1333 .1272 .1732

105.000

.0637 .0947 .1207 .1815 .2206

120.000

.0904 .1459 .1048 .3029 .2368 .2399

135.000

.0291 .1973 .2570 .2884 .2081 .2315

150.000

.0187 .1913 .3562 .2453 .2120 .2126

165.000

.0249 .1740 .4119 .1096 .2252 .2639

180.000

.0000 .0000 .0000 .0000 .0000

X/LB

.0000 .0000 .0000 .0000 .0000

PHI

.000 1.0757 .4569 .1763 .1326 .1797 .5717

40.000

.0072 .0607 .1292 .1533 .1028 .0324

70.000

.2422 .0811 .0588 .0697 .0599 .0657

90.000

.1723 .0157 .0731 .1333 .1272 .1732

105.000

.0637 .0947 .1207 .1815 .2206

120.000

.0904 .1459 .1048 .3029 .2368 .2399

135.000

.0291 .1973 .2570 .2884 .2081 .2315

150.000

.0187 .1913 .3562 .2453 .2120 .2126

165.000

.0249 .1740 .4119 .1096 .2252 .2639

180.000

.0000 .0000 .0000 .0000 .0000

X/LB

.0000 .0000 .0000 .0000 .0000

PHI

.000 1.0757 .4569 .1763 .1326 .1797 .5717

40.000

.0072 .0607 .1292 .1533 .1028 .0324

70.000

.2422 .0811 .0588 .0697 .0599 .0657

90.000

.1723 .0157 .0731 .1333 .1272 .1732

105.000

.0637 .0947 .1207 .1815 .2206

120.000

.0904 .1459 .1048 .3029 .2368 .2399

135.000

.0291 .1973 .2570 .2884 .2081 .2315

150.000

.0187 .1913 .3562 .2453 .2120 .2126

165.000

.0249 .1740 .4119 .1096 .2252 .2639

180.000

.0000 .0000 .0000 .0000 .0000

DATE 10 FEB 76 TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (XE8805)

ALPHA ( 3 ) = 3.918 BETA ( 4 ) = 4.207 MACH = .59500 Q = 591.74 P = 2387.9 RW/L = 4.8063

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB	.0000	.0080	.0230	.0460	.0700	.1120	.1580	.1660	.1770	.2040	.2510	.3010	.3780	.4970	.5740
PHI	.000	.5173	.1058	.0211	-.0569	-.0801	-.0745	-.0638	-.0485	-.0251	.0087	.0330	.0351		
20.000	1.0602		.1026	.0109	-.0622	-.0658	-.0953	-.0778	-.1124	-.0237	-.0014	.0102	.0629		
40.000			.1555	.0068	-.0506	-.0822	-.0947	-.1886	-.2546	-.1319	-.0725	-.0458			
55.000			.1740	.0196	-.0386	-.0716	-.1504	-.1577	-.2825	-.1487	-.0531	-.0386			
70.000			.1723	.0102	-.0487	-.0716	-.1767	-.3520	-.3410	-.2453	-.0815	-.0387			
90.000		.2512	.1928	.0191	-.0478	-.0728	-.1957	-.4394	-.5183	-.3229	-.1395	-.0603	-.0338		
120.000			.2225	.0831	.0005	.0299	-.1292	-.5183	-.6850	-.3229	-.1395	-.0603	-.0338		
140.000			.2342	.1508	.0761	.1029	.2334	-.1721	-.1465	-.2689	-.1410	-.0660	-.0364		
150.000															
151.000															
162.000															
165.000															
169.000															
174.000															
180.000	1.0602	.4207	.2540	.1700	.1241	.1852	.5126	.3546	.3584	-.14097	-.2699	-.1439	-.0679	-.0427	
X/LB	.6520	.7290	.7790	.8210	.8790	.9210	.9600	.9990	1.0180	1.0460					

PHI	.000	-.0164	-.0220	-.0729	-.1410	-.1277	-.1310	-.0304	.2789	.0212					
40.000	.0164		-.0621	-.0621	-.1301	-.1519	-.1073	-.0528	.1426	-.0492					
70.000	-.2516	-.2312	-.1208	.0057	.0057	-.1151	-.1002	-.1404							
90.000	-.1732	-.1569	-.0531	.0033	.0033	-.1930	-.1611	-.1892							
105.000			-.0008	.0176	.0176	-.2971	-.2229	-.2389							
110.000															
120.000	-.0848	-.0567	.0508	.0829	.0829	-.4118	-.3104	-.2841							
130.000			.1395	.3006	.3006	-.3876	-.2705	-.2701							
150.000	-.0314	.0233	.1537	.2667	.2667	-.3559	-.2907	-.2612							
165.000	-.0295		.1653	.1653	.1653	-.2188	-.3023	-.2711							
180.000	-.0369	.0371	.1767	.3223	.3223										

ALPHA ( 3 ) = 3.922 BETA ( 5 ) = 8.252 MACH = .59500 Q = 741.74 P = 2387.9 RW/L = 4.8063

SECTION ( 1 ) ORBITER FUSELAGE

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI	.000	.4862	.0947	-.0035	-.0699	-.0959	-.0836	-.0844	-.0652	-.0364	-.0124	.0182	.0154		
20.000	1.0070		.0625	-.0122	-.0824	-.0959	-.1054	-.1086	-.1256	-.0691	-.0349	-.0144	.0469		
40.000			.0637	-.0495	-.0918	-.1173	-.1259	-.1533	-.1256	-.0691	-.0349	-.0144	.0469		
55.000			.0589	-.0699	-.1091	-.1429	-.1917	-.2401	-.1256	-.0691	-.0349	-.0144	.0469		
70.000			.0499	-.0817	-.1341	-.1297	-.2195	-.2979	-.2763	-.1481	-.0860	-.0479	.0479		
90.000		.0758	.0731	-.0829	-.1358	-.1386	-.2551	-.4197	-.3018	-.1498	-.0652	-.0370	.0370		
120.000			.1109	-.0105	-.0975	-.0570	-.2404	-.5129	-.3593	-.2518	-.0566	-.0313	.0313		

**DATE 10 FEB 76**

TABLED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

**PAGE 88**

$$\text{ALPHA} ( 3 ) = 3.922 \quad \text{BETA} ( 5 ) = 8.252$$

(CODES)

AMES 11-07310A14B) -140A/B/C/R ORB FUSELAGE

## SECTION 11 ORBITER FUSELAGE

DEPENDENT VARIABLE CP

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000-291169.000  
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[illegible]

**PH ( 4 )**

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ALPHA ( 4 ) = 7.956   BETA ( 1 ) = -7.918   MACH = .59428
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SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

871/X

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90.000

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0301-2305-15

55.000

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74.000

(50883X)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 7.956      BETA ( 1 ) = -7.912

SECTION ( ORBITER FUSELAGE	DEF. JENT VARIABLE CP
1	1
2	2
3	3
4	4
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98	98
99	99
100	100

[illegible][illegible]

Y/YR	.6520	.7290	.7790	.8210	.8790	.9210	.9600	.9990	1.0180	1.0460
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PHI	.0771	.0310	-.0195	-.0867	-.1012	-.0149	.3090
COO	.000		-.0012	-.0691	-.0452	-.0685	.3090
NO	.000			-.1147			.2054
							-.0093

[illegible]

135.000	-.1429	-.0497	.1343	-.3457	-.2399	-.1644	-.2151
150.000	-.1156	-.0914	.1525	-.0691	-.2707	-.1287	-.1746
165.000	-.1009	-.0289	.1299	.0914	.0901	-.0598	-.2692
180.000			.1078				

	7	PCTA / 21 = -7.89%	MICV = 60.28	O = 590.57	P = 2398.9.	RN/L = 4.8012
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SECTION 1100B1ITER FUSELAGE	DEPENDENT VARIABLE CP
1100B1ITER FUSELAGE	CP

[illegible][illegible][illegible]

55,000	.4476	.2577	.1727	.0826	-.0124	-.0664	-.0874	-.0727
70,000	.4110	.2378	.1352	.0838	-.0357	-.1432	-.2068	-.1194

50.500	.3165	.3756	.6108	.1417	.0739	.1126	.0445	- .3263	- .3533	- .3654	- .2261	+ .2275
120.000		.2976	.1619									

[illegible]

162.000	-1.4091	-3.355	-1.1821	-0.0955	-0.0761
165.000					

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100																																																																																																																				
169,000	170,000	171,000	172,000	173,000	174,000	175,000	176,000	177,000	178,000	179,000	180,000	181,000	182,000	183,000	184,000	185,000	186,000	187,000	188,000	189,000	190,000	191,000	192,000	193,000	194,000	195,000	196,000	197,000	198,000	199,000	200,000	201,000	202,000	203,000	204,000	205,000	206,000	207,000	208,000	209,000	210,000	211,000	212,000	213,000	214,000	215,000	216,000	217,000	218,000	219,000	220,000	221,000	222,000	223,000	224,000	225,000	226,000	227,000	228,000	229,000	230,000	231,000	232,000	233,000	234,000	235,000	236,000	237,000	238,000	239,000	240,000	241,000	242,000	243,000	244,000	245,000	246,000	247,000	248,000	249,000	250,000	251,000	252,000	253,000	254,000	255,000	256,000	257,000	258,000	259,000	260,000	261,000	262,000	263,000	264,000	265,000	266,000	267,000	268,000	269,000	270,000	271,000	272,000	273,000	274,000	275,000	276,000	277,000	278,000	279,000	280,000	281,000	282,000	283,000	284,000	285,000	286,000	287,000	288,000	289,000	290,000	291,000	292,000	293,000	294,000	295,000	296,000	297,000	298,000	299,000	300,000	301,000	302,000	303,000	304,000	305,000	306,000	307,000	308,000	309,000	310,000	311,000	312,000	313,000	314,000	315,000	316,000	317,000	318,000	319,000	320,000	321,000	322,000	323,000	324,000	325,000	326,000	327,000	328,000	329,000	330,000	331,000	332,000	333,000	334,000	335,000	336,000	337,000	338,000	339,000	340,000	341,000	342,000	343,000	344,000	345,000	346,000	347,000	348,000	349,000	350,000	351,000	352,000	353,000	354,000	355,000	356,000	357,000	358,000	359,000	360,000	361,000	362,000	363,000	364,000	365,000	366,000	367,000	368,000	369,000	370,000	371,000	372,000	373,000	374,000	375,000	376,000	377,000	378,000	379,000	380,000	381,000	382,000	383,000	384,000	385,000	386,000	387,000	388,000	389,000	390,000	391,000	392,000	393,000	394,000	395,000	

[illegible]

100

Variable	Mean	Standard deviation	Skewness	Kurtosis
Age	38.13	10.16	-0.016	0.041
Gender	0.000	0.000	0.000	0.000
Marital status	0.000	0.000	0.000	0.000
Education	0.000	0.000	0.000	0.000
Income	0.000	0.000	0.000	0.000
Occupation	0.000	0.000	0.000	0.000
Religion	0.000	0.000	0.000	0.000
Political party	0.000	0.000	0.000	0.000
Health status	0.000	0.000	0.000	0.000
Life satisfaction	0.000	0.000	0.000	0.000
Life expectancy	0.000	0.000	0.000	0.000
Life expectancy squared	0.000	0.000	0.000	0.000
Life expectancy cubed	0.000	0.000	0.000	0.000
Life expectancy to the fourth power	0.000	0.000	0.000	0.000
Life expectancy to the fifth power	0.000	0.000	0.000	0.000
Life expectancy to the sixth power	0.000	0.000	0.000	0.000
Life expectancy to the seventh power	0.000	0.000	0.000	0.000
Life expectancy to the eighth power	0.000	0.000	0.000	0.000
Life expectancy to the ninth power	0.000	0.000	0.000	0.000
Life expectancy to the tenth power	0.000	0.000	0.000	0.000
Life expectancy to the eleventh power	0.000	0.000	0.000	0.000
Life expectancy to the twelfth power	0.000	0.000	0.000	0.000
Life expectancy to the thirteenth power	0.000	0.000	0.000	0.000
Life expectancy to the fourteenth power	0.000	0.000	0.000	0.000
Life expectancy to the fifteenth power	0.000	0.000	0.000	0.000
Life expectancy to the sixteenth power	0.000	0.000	0.000	0.000
Life expectancy to the seventeenth power	0.000	0.000	0.000	0.000
Life expectancy to the eighteenth power	0.000	0.000	0.000	0.000
Life expectancy to the nineteenth power	0.000	0.000	0.000	0.000
Life expectancy to the twentieth power	0.000	0.000	0.000	0.000
Life expectancy to the twenty-first power	0.000	0.000	0.000	0.000
Life expectancy to the twenty-second power	0.000	0.000	0.000	0.000
Life expectancy to the twenty-third power	0.000	0.000	0.000	0.000
Life expectancy to the twenty-fourth power	0.000	0.000	0.000	0.000
Life expectancy to the twenty-fifth power	0.000	0.000	0.000	0.000
Life expectancy to the twenty-sixth power	0.000	0.000	0.000	0.000
Life expectancy to the twenty-seventh power	0.000	0.000	0.000	0.000
Life expectancy to the twenty-eighth power	0.000	0.000	0.000	0.000
Life expectancy to the twenty-ninth power	0.000	0.000	0.000	0.000
Life expectancy to the thirtieth power	0.000	0.000	0.000	0.000
Life expectancy to the thirty-first power	0.000	0.000	0.000	0.000
Life expectancy to the thirty-second power	0.000	0.000	0.000	0.000
Life expectancy to the thirty-third power	0.000	0.000	0.000	0.000
Life expectancy to the thirty-fourth power	0.000	0.000	0.000	0.000
Life expectancy to the thirty-fifth power	0.000	0.000	0.000	0.000
Life expectancy to the thirty-sixth power	0.000	0.000	0.000	0.000
Life expectancy to the thirty-seventh power	0.000	0.000	0.000	0.000
Life expectancy to the thirty-eighth power	0.000	0.000	0.000	0.000
Life expectancy to the thirty-ninth power	0.000	0.000	0.000	0.000
Life expectancy to the fortieth power	0.000	0.000	0.000	0.000
Life expectancy to the forty-first power	0.000	0.000	0.000	0.000
Life expectancy to the forty-second power	0.000	0.000	0.000	0.000
Life expectancy to the forty-third power	0.000	0.000	0.000	0.000
Life expectancy to the forty-fourth power	0.000	0.000	0.000	0.000
Life expectancy to the forty-fifth power	0.000	0.000	0.000	0.000
Life expectancy to the forty-sixth power	0.000	0.000	0.000	0.000
Life expectancy to the forty-seventh power	0.000	0.000	0.000	0.000
Life expectancy to the forty-eighth power	0.000	0.000	0.000	0.000
Life expectancy to the forty-ninth power	0.000	0.000	0.000	0.000
Life expectancy to the fiftieth power	0.000	0.000	0.000	0.000
Life expectancy to the fifty-first power	0.000	0.000	0.000	0.000
Life expectancy to the fifty-second power	0.000	0.000	0.000	0.000
Life expectancy to the fifty-third power	0.000	0.000	0.000	0.000
Life expectancy to the fifty-fourth power	0.000	0.000	0.000	0.

(XEB005)

DATE 10 FEB 76 TABULATED PRESSURE DATA - 0A119 ( AMES 11-073-1 )  
AMES 11-073(0A119) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 7.963 BETA ( 2 ) = -3.894

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP  
X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI  
70.000 -.3473 -.2537 -.0923 .1148 -.0055 -.0016 -.0720  
90.000 -.2548 -.1802 -.0255 .1570 -.0509 -.0778 -.1445  
105.000 .05.000 .0284 .2725 -.1315 -.1313 -.1951  
110.000  
120.000 -.2414 -.0885 .1561 .2135 -.2615 -.1912 -.1917  
135.000 .35.000 .1982 .1515 -.2655 -.1862 -.2203  
150.000 -.1034 .0026 .1884 .1068 -.2489 -.1622 -.1997  
165.000 -.0776 .1609 -.0391 -.1487 -.2548  
180.000 -.0706 .0077 .1400 .2760

ALPHA ( 4 ) = 7.970 BETA ( 3 ) = .145 MACH = .59428 Q = 590.57 P = 2388.9 RAYL = 4.8012

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI  
20.000 1.0379 .6910 .2737 .1479 .0517 .0887  
40.000 .2918 .1575 .0585 .087  
55.000 .3304 .1667 .0845 .0404  
70.000 .3315 .1547 .0746 .0031  
90.000 .2942 .1301 .0423 .0106  
100.000 .3679 .1137 .0478 .0060  
120.000 .2751 .1137 .0223 .0720  
140.000 .2316 .1009 .0223 .0720  
150.000 .1651 .0966 .0266 .0875  
162.000  
165.000  
169.000  
174.000  
180.000  
1.0379 .2871 .1364 .0852 .0464 .1089 .5129 .3162  
.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI  
40.000 .0925 .0529 -.0114 -.0901 -.0667 -.1037 -.0083  
70.000 .1050 .0068 -.0727 -.1231 -.0756 -.0414  
90.000 -.3611 -.2767 -.1166 -.0584 -.0500 -.1024  
105.000 -.2603 -.1900 -.0383 .0838 .1337 .1241 .1699  
110.000 .0422 .1170 .2050 .1721 .2101  
120.000 .1628 -.0532 .1095 .1143 .2953 .2339 .2190  
135.000 .1279 .1279 .2527 .3001 .2174 .2309  
150.000 -.0683 -.0062 .1427 .4046 .2798 .2168 .2142

(XEB805)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 7.970 BETA ( 3 ) = .145

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0480

PHI

165.000 -.0558 .1458 -.1287 -.2309 -.2266  
180.000 -.3511 .0169 .1546 .4426

ALPHA ( 4 ) = 7.969 BETA ( 4 ) = 4.201 MACH = .59428 Q = 590.57 P = 2388.9 RV/L = 4.8012

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1123 .1580 .1860 .1770 .2040 .2510 .3010 .3780 .4570 .5740

PHI

.000 1.0196 .6722 .2612 .1377 .0432 -.0069  
20.000 .2445 .1148 .0353 -.0330  
40.000 .2455 .0955 .0242 -.0558  
55.000 .2010 .0411 -.0204 -.1507  
70.000 .1659 .0247 -.0505 -.1675  
90.000 .1650 .0119 -.0393 -.1793  
120.000 .1556 .0309 -.0356 -.1102  
140.000 .1336 .0712 .0044 .2036  
150.000  
162.000  
165.000  
169.000  
174.000  
180.000

.0000 .0080 .0230 .0460 .0700 .1123 .1580 .1860 .1770 .2040 .2510 .3010 .3780 .4570 .5740  
1.0196 .2538 .1355 .0647 .0329 .0953 .4633 .2967 .3039  
1.0196 .2538 .1355 .0647 .0329 .0953 .4633 .2967 .3039  
1.0196 .2538 .1355 .0647 .0329 .0953 .4633 .2967 .3039

PHI

.000 .0814 .0452 -.0142 -.0948 -.0868 -.1049 -.0144  
40.000 .0888 .0012 -.0718 -.1257 -.1257 -.1257 -.0405  
70.000 -.3742 -.3047 -.1577 -.0090 -.1234 -.1036 -.1359  
90.000 -.2677 -.2160 -.0823 -.0115 -.2017 -.1959 -.1846  
105.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
110.000  
120.000  
135.000  
150.000  
165.000  
180.000

.0000 .0080 .0230 .0460 .0700 .1123 .1580 .1860 .1770 .2040 .2510 .3010 .3780 .4570 .5740

DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB805)

ALPHA ( 4 ) = 7.967 BETA ( 5 ) = 8.254 MACH = .59428 Q = 590.57 P = 2388.9 RN/L = 4.8012

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB	.0000	.0080	.0230	.0460	.0700	.1120	.1580	.1660	.1770	.2040	.2510	.3010	.3780	.4970	.5740
PHI															
20.000	.9632	.6326	.2371	.1123	.0212			-.0328	-.0357	-.0216	-.0003	.0329	.0713	.0752	
40.000			.1922	.0682	-.0088	-.0453		-.0688	-.0771	-.1701	-.0975	-.0402	.0045	.0845	
55.000			.1223	.0171	-.0528	-.0925		-.1223	-.1704						
70.000			.0507	-.0787	.1259	-.1718		-.2250	-.2741						
90.000			.0371	-.0920	-.1477	-.1276		-.2253	-.3125	-.3101	-.2009	-.1491	-.1239		
120.000	.0132		.0471	-.0659	-.1351	-.1368		-.2424	-.4114	-.3147	-.1858	-.1123	-.0949		
140.000			.0548	-.0579	-.1124	-.0625		-.2168	-.5178	-.3634	-.2483	-.0811	-.0644		
150.000			.0505	.0099	-.0562	-.0123		.0767	-.6236	-.3366	-.1689	-.0821	-.0758		
165.000									-.3488						
174.000									-.3442						
180.000										-.13096	-.3013	-.1745	-.0988	-.0963	
X/LB	.9632	.1885	.0889	.0224	-.0146	.0499	.4008	.1988	-1.5209	-.3239	-.1955	-.1276	-.1130		
	.6520	.7290	.7790	.8210	.8790	.9210	.9600	.9990	1.0180	1.0480					

PHI

20.000	.0556	.0313	-.0260	-.0970	-.0943	-.1113	-.0230		.3083	.0244					
40.000	.0712		-.0125	-.0810	-.1397	-.0661	-.0484		.1559	-.0455					
55.000	-.3743	-.3302	-.2063	-.0770	.1675	.1302	-.1477								
70.000	-.2721	-.2496	-.1560	-.0783	-.2425	-.1873	-.1923								
90.000			-.1082	-.0193	-.3898	-.2739	-.2642								
105.000								-.3178							
110.000								-.2817							
120.000	-.1434	-.1480	-.0637	-.2004	-.5223	-.3763	-.3192								
135.000			.0453	.3839	-.4967	-.3584	-.3260								
150.000	-.0975	-.0535	.0732	.1483	-.5021	-.4046	-.3173								
165.000	-.0988		.0879		-.4140	-.4132	-.2861								
180.000	-.1171	-.0334	.1091	.1318											

ALPHA ( 5 ) = 12.002 BETA ( 1 ) = -7.881 MACH = .59402 Q = 591.86 P = 2388.2 RN/L = 4.8047

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB	.0000	.0060	.0230	.0460	.0700	.1120	.1580	.1660	.1770	.2040	.2510	.3010	.3780	.4970	.5740
PHI															
20.000	.9243	.7757	.3728	.2309	.1235			.0440	.0439	.0461	.0644	.0922	.1410	.1585	
40.000			.4505	.2050	.1754	.0374		.0638	.0601						
55.000			.5074	.3727	.2658	.1904		.1223	.0878	.1030	.1321	.1516	.1638	.2172	
70.000			.5743	.3866	.2824	.1766		.0722	.0067						
90.000			.4916	.3192	.2102	.1531		.0373	-.0779	-.1822	-.1141	-.0917	-.0951		
120.000	.5401		.4092	.2613	.1989	.1218		.0192	-.1779	-.2244	-.1671	-.1379	-.1419		
			.2235	.0851	.0032	.0447		.0404	-.3157	-.4316	-.5613	-.4903	-.5076		

DATE 10 FEB 76  
TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

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A: PHA ( 5) = 12.002 BETA ( 1) = -7.891
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SECTION 1108BITER FUSELAGE

[illegible][illegible]

X/LB	.6520	.7290	.7790	.8210	.8790	.9210	.9600	.9990	1.0180	1.0400
PHI										
.000	.1477	.1067	.0458	-.0347	-.0432	-.0710	.0078		.3303	.0473
40.000	.1918		.0778	-.0090	-.0802	-.0064	-.0464		.2211	-.0020
90.000	-.4471	-.2817	-.0746	.1626	.0499	.0465	-.0375			
70.000	-.3399	-.2039	-.0123	.2208	.0249	-.0211	-.1189			
105.000			.0190	.3895	-.0443	-.0753	-.1647			
110.000								-.2953		
120.000	-.4621	-.2228	.0071	.5319	-.2434	-.1810	-.1816	-.2720		
135.000			.0466	.2218	-.2921	-.1948	-.2367			
150.000	-.2017	-.0955	.0390	-.0560	-.3245	-.1480	-.1966			
165.000	-.1933		.0539		.0555	-.0704	-.2564			
180.000	-.1703	-.1119	-.0113	.2058						

180.000	- .1703	- .1119	.0113	.2536					
ALPHA ( 5 ) =	12.020	BETA ( 2 ) =	- 3.874	MACH	=	.59502	Q	=	591.86
P	=	2388.2	RN/L	=	4.8047				

SECTION 11 ORBITER FUSELAGE

SECTION ( 110RB)ITER FUSELAGE			DEPENDENT VARIABLE CP												
X/LB	.0000	.0080	.0230	.0460	.0700	.1120	.1580	.1660	.1770	.2040	.2510	.3010	.3780	.4970	.5740
PHI	.9491	.8193	.4133	.2555	.1007	.1111		.0697		.0602	.0580	.0824	.1073	.1530	.1674
20.000			.4635	.2940	.1841	.1547		.0731		.0645	.0534	.0970	.1247	.1468	.2074
40.000			.5265	.3265	.2328	.1893		.0939		.0531					
55.000				.2808	.1893	.0840		-.0077		-.0892		-.1636	-.1337	-.1277	
70.000				.3876	.1168	.0809		-.0305		-.1483	-.2374	-.1659	-.1558	-.1428	
90.000	.4240		.3241	.1707	.1195	.0546		-.0437		-.2393	-.2633	-.1749	-.3700	-.3565	
120.000			.1834	.0648	-.0065	.0386		.0081		-.3715	-.4134				
150.000				-.0031	-.0432	.0301		.3494		-.5274	-.5264	-.2350	-.1381	-.1542	
151.000			.0633						-.0346						
162.000									-.0839			-.1903	-.1193	-.1109	
165.000										-.1.5282	-.3618				
169.000								.3405							
174.000							.4978								

PHI	000	9491	8193	4133	2555	1607	1111	.6997	.0602	.0580	.0824	.1073	.1530	.1674
20.000				.4635	.2940	.1841	.1111	.0771	.0645					
40.000				.5265	.3268	.2328	.1547	.0939	.0531	.0534	.0970	.1247	.1468	.2074
55.000				.4673	.2808	.1893	.0840	-.0077	-.0892					
70.000				.3876	.2137	.1168	.0809	-.0305	-.1483	-.2374	-.1636	-.1337	-.1277	
90.000		.4240		.3241	.1707	.1195	.0546	-.0437	-.2393	-.2633	-.1859	-.1568	-.1428	
120.000				.1834	.0648	-.0065	.0366	.0081	-.3715	-.4134	-.4749	-.3700	-.3565	
140.000									-.5274	-.5264	-.2350	-.1381	-.1542	
150.000				.0633	-.0031	-.0432	.0301	.3494	-.7777					
162.000									-.0346					
165.000									-.0839					
169.000									-1.5292	-.3618	-.1903	-.1193	-.1109	
174.000								.3405						
								.4978						

4978 .3405

AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

(XE8B05)

ALPHA ( 5 ) = 12.020 BETA ( 2 ) = -3.874

## SECTION 1: ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB	.0000	.0080	.0230	.0460	.0700	.1120	.1580	.1770	.2040	.2510	.3010	.3780	.4970	.5740
Phi														
180.000	.9491	.1241	-.0050	-.0130	-.0422	.0306	.2098	-1.0182	-.2889	-.1523	-.0825	-.0799		

III

160.000	.9491	.1241	-.0050	-.0130	-.0422	.0306	.2088	-1.8182	-.2889	-.1523	-.0825	-.0799
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**XLB**

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.000	.1614	.0523	-.0260	-.0361	-.0626	.0151	.3318	.0552
40.000	.1896	.0800	-.0076	-.0756	-.0168	-.0280	.2155	-.0069
76.000	.4611	.7727						

12. 8

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10. **U.S. DEPARTMENT OF JUSTICE**

2. 2. 2. 2. 2.

[illegible]

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 84

1000

0.001

**Prüfung**

REF ID: A66666

## SECTION ( ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

|   |
|---|
| X/LB  |
| .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740 |

五

[illegible]

505

55

70.0

3.06,

20.

40.0

50.0

51.0

3.

3.5

**69.0**

**B. 2.**

**0.0**

|    |       |       |       |       |       |       |       |       |        |        |
|----|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| 76 | .6520 | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0450 |
|----|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|

一五

|        |       |       |        |        |        |        |       |       |        |
|--------|-------|-------|--------|--------|--------|--------|-------|-------|--------|
| .000   | .1653 | .1177 | .0487  | -.0282 | -.0398 | -.0662 | .0144 | .3350 | .0571  |
| 40.000 | .1806 | .0717 | -.0092 | -.0865 | -.0389 | -.0177 |       | .2017 | -.0151 |

DATE 10 FEB 76 TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
 ALPHA ( 5 ) = 12.028 BETA ( 3 ) = .150  
 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB805)

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP  
 X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI  
 70.000 - .5066 - .3751 - .1786 .0171 - .0832 - .0566 - .0971  
 90.000 - .3657 - .2611 - .0927 .0542 - .1445 - .1184 - .1478  
 105.000 .0064 .0912 - .2327 - .1816 - .2099  
 110.000  
 120.000 - .2141 - .1022 .0610 .1752 - .2960 - .2380 - .2200  
 135.000 .0467 .3285 - .3160 - .2371  
 150.000 - .1518 - .0703 .1083 .4975 - .2958 - .2313 - .2195  
 165.000 - .0938 .1366 - .1457 - .2465 - .2380  
 180.000 - .0858 - .0046 .1419 .4707

ALPHA ( 5 ) = 12.028 BETA ( 4 ) = 4.211 MACH = .59502 Q = 591.66 P = 2388.2 RN/L = 4.8047

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1860 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI  
 20.000 .9  
 40.000 .8079 .4047 .2538 .1434 .0679  
 55.000 .3708 .2353 .1236 .0778 .0180  
 70.000 .3057 .1662 .0778 .0180  
 90.000 .1871 .0291 - .0450 - .1241  
 110.000 .1250 - .0148 - .0809 - .0771  
 120.000 .1163 - .0283 - .0612 - .0790  
 140.000 .0621 - .0406 - .0995 - .0277  
 150.000 .0208 - .0194 - .0715 .0015  
 162.000  
 169.000  
 174.000  
 180.000

.0812 .0538 .0629 .0709 .1123 .1484 .1620  
 .0258 .0174 .0892 .0326 .0807 .1644  
 -.0369 -.1892 .2451 .2697 .3242 .2305 .1846 .1932  
 -.1795 .3567 .3112 .2224 .1625 .1639  
 -.1863 .4689 .3931 .3306 .1587 .1439  
 -.1132 .6129 .3952 .1654 .0754 .0780  
 .1657  
 -.2395  
 -.2595  
 -1.3951 .2982 .1498 .0720 .0675  
 .2468  
 .2295  
 -1.6776 .3039 .1484 .0784 .0842  
 .9424 .0808 .0130 - .0134 - .0387 .0280  
 .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI  
 40.000 .1556 .1195 .0473 - .0374 - .0449 - .0790 .0093  
 70.000 .1644 .0635 - .0214 - .0367 - .0548 - .0258  
 90.000 .4983 - .4002 - .2119 - .0519 - .1454 - .1286  
 105.000 - .3692 - .2867 - .1348 - .0691 - .2259 - .1741 - .1832  
 120.000 .0765 - .0272 - .3418 - .2401 - .2408  
 135.000 .0259 - .4106 - .3119 - .2738  
 150.000 .3791 - .3878 - .2569  
 .3268 .0469  
 .1867 - .0269  
 .3226  
 -.2618  
 -.2738  
 -.2569  
 -.2552  
 .4105  
 .9600  
 .9990  
 1.0180  
 1.0460

REPRODUCIBILITY OF THIS  
 ORIGINAL PAGE IS POOR

(XEBB05)

ALPHA ( 5 ) = 12.028 BETA ( 4 ) = 4.211

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8780 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 -.0818 .151 -2623 -.3312 -.2460  
180.000 -.1059 -.0251 .1046 .4121

ALPHA ( 5 ) = 12.020 BETA ( 5 ) = 8.278 MACH = .59502 Q = 591.86 P = 2388.2 RN/L = 4.8047

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 .8825 .7666 .3727 .2249 .1225 .0731 .0215 .0441 .0359 .0456 .0611 .0961 .1371 .1455  
20.000 .2980 .1660 .0731 .0215 -.0096 -.0290 -.1870 -.2083 -.1171 -.0333 .0375 .1331  
40.000 .1649 .0575 -.0226 -.0820 -.1259 -.3312 -.3235 -.3409 -.2534 -.2145 -.2196  
55.000 .0278 .1158 .1681 .2296 -.2828 -.3235 -.3984 -.3269 -.2222 -.1627 -.1686  
70.000 .0105 .1185 .1712 .1478 .2356 .2342 .2342 .5257 .3783 .2803 .1065 .1143  
90.000 -.0682 .0066 .1165 .1435 .1417 .1947 .6508 .3443 .1588 .0679 .0778  
120.000 .0163 .1026 .1556 .0732 .0551 .3719  
140.000 -.0435 -.0630 .1209 .0508 -.3692  
150.000 .1823  
162.000 .1425  
165.000 .3472  
169.000 .1425  
174.000 .9990 1.0180 1.0460  
180.000 .9990 1.0180 1.0460

X/LB

PHI

.000 .1446 .1067 .0419 .0401 .0500 .0824 .0013 .3284 .0424  
40.000 .1388 .0527 .0236 .0236 .1078 .0502 .0325 .1763 .0393  
70.000 .4965 .4206 .2532 .1301 .1945 .1465 .1511  
90.000 .3720 .3236 .2186 .1373 .2805 .1944 .1852  
105.000 .1660 .1366 .1366 .4562 .3017 .2828  
110.000 .1314 .0656 .5387 .3947 .3308  
120.000 .0532 .4966 .5350 .3767 .3311  
135.000 .0457 .4176 .5437 .4384 .3376  
150.000 .1093 .0687 .0457 .4974 .4440 .2912  
165.000 .1443 .0177 .0206  
180.000 .1797 .1305 .1504

DATE 10 FEB 76  
 TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8808) ( 05 AUG 75 )

## PARAMETRIC DATA

RUDER = .000 SPOERK = 55.000  
 BOFLAP = 22.500 L-ELVN = .000  
 R-ELVN = .000 MACH = .600

ALPHA ( 1 ) = -4.026 BETA ( 1 ) = -7.883 MACH = .59594 Q = 593.39 P = 2387.0 RN/L = 4.8396

## REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO  
 LREF = 474.8000 IN. YMRP = .0000 IN. YO  
 BREF = 936.0680 IN. ZMRP = 375.0000 IN. ZO  
 SCALE = .0300

ALPHA ( 1 ) = -4.026 BETA ( 1 ) = -7.883 MACH = .59594 Q = 593.39 P = 2387.0 RN/L = 4.8396

SECTION 1) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| SECTION | 1) ORBITER FUSELAGE                        | DEPENDENT VARIABLE CP                           |
|---------|--|---|
| X/LB    | .0000 .0080 .0230 .0460 .0700 .1120 .1590  | .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740 |
| PHI     | .0000 .1401 .2137 .2301 .2818 .2823 .2823  | .1820 .2458 .2458 .3682 .1416 .1416 .1416       |
| 20.000  | .0000 .1401 .2137 .2301 .2818 .2823 .2823  | .1820 .2458 .2458 .3682 .1416 .1416 .1416       |
| 40.000  | .0000 .1401 .2137 .2301 .2818 .2823 .2823  | .1820 .2458 .2458 .3682 .1416 .1416 .1416       |
| 55.000  | .0000 .1401 .2137 .2301 .2818 .2823 .2823  | .1820 .2458 .2458 .3682 .1416 .1416 .1416       |
| 70.000  | .0000 .1401 .2137 .2301 .2818 .2823 .2823  | .1820 .2458 .2458 .3682 .1416 .1416 .1416       |
| 90.000  | .0000 .1401 .2137 .2301 .2818 .2823 .2823  | .1820 .2458 .2458 .3682 .1416 .1416 .1416       |
| 120.000 | .0000 .1401 .2137 .2301 .2818 .2823 .2823  | .1820 .2458 .2458 .3682 .1416 .1416 .1416       |
| 140.000 | .0000 .1401 .2137 .2301 .2818 .2823 .2823  | .1820 .2458 .2458 .3682 .1416 .1416 .1416       |
| 150.000 | .0000 .1401 .2137 .2301 .2818 .2823 .2823  | .1820 .2458 .2458 .3682 .1416 .1416 .1416       |
| 162.000 | .0000 .1401 .2137 .2301 .2818 .2823 .2823  | .1820 .2458 .2458 .3682 .1416 .1416 .1416       |
| 165.000 | .0000 .1401 .2137 .2301 .2818 .2823 .2823  | .1820 .2458 .2458 .3682 .1416 .1416 .1416       |
| 169.000 | .0000 .1401 .2137 .2301 .2818 .2823 .2823  | .1820 .2458 .2458 .3682 .1416 .1416 .1416       |
| 174.000 | .0000 .1401 .2137 .2301 .2818 .2823 .2823  | .1820 .2458 .2458 .3682 .1416 .1416 .1416       |
| 180.000 | .0000 .1401 .2137 .2301 .2818 .2823 .2823  | .1820 .2458 .2458 .3682 .1416 .1416 .1416       |
| X/LB    | 1.0161 .7162 .4518 .3462 .2718 .2867 .7064 | .5704 .3613 .9990 1.0180 1.0460                 |
| PHI     | .0000 .1275 .1581 .1756 .1740 .1740 .1740  | .3439 .1018 .2512 .0466                         |
| 40.000  | .0000 .1275 .1581 .1756 .1740 .1740 .1740  | .3439 .1018 .2512 .0466                         |
| 70.000  | .0000 .1275 .1581 .1756 .1740 .1740 .1740  | .3439 .1018 .2512 .0466                         |
| 90.000  | .0000 .1275 .1581 .1756 .1740 .1740 .1740  | .3439 .1018 .2512 .0466                         |
| 105.000 | .0000 .1275 .1581 .1756 .1740 .1740 .1740  | .3439 .1018 .2512 .0466                         |
| 110.000 | .0000 .1275 .1581 .1756 .1740 .1740 .1740  | .3439 .1018 .2512 .0466                         |
| 120.000 | .0000 .1275 .1581 .1756 .1740 .1740 .1740  | .3439 .1018 .2512 .0466                         |
| 135.000 | .0000 .1275 .1581 .1756 .1740 .1740 .1740  | .3439 .1018 .2512 .0466                         |
| 150.000 | .0000 .1275 .1581 .1756 .1740 .1740 .1740  | .3439 .1018 .2512 .0466                         |
| 165.000 | .0000 .1275 .1581 .1756 .1740 .1740 .1740  | .3439 .1018 .2512 .0466                         |
| 180.000 | .0000 .1275 .1581 .1756 .1740 .1740 .1740  | .3439 .1018 .2512 .0466                         |

DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB806)

ALPHA ( 1 ) = -4.010 BETA ( 2 ) = -3.877 MACH = .59594 Q = 593.39 P = 2387.0 RV/L = 4.8386

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| .000    | 1.0572 | .1810  | -.1727 | -.1690 | -.1856 |        |        | -.1608 | -.1306 | -.1016 | -.0727 | -.0553 | -.0382 | -.0614 |       |
| 20.000  |        |        | -.1657 | -.1899 | -.2415 | -.2376 |        | -.2001 | -.1688 | -.1365 | -.1013 | -.0659 | -.0305 | -.0051 |       |
| 40.000  |        |        | .0210  | -.1937 | -.2530 | -.2612 |        | -.2995 | -.2687 | -.1965 | -.1115 | -.0659 | -.0205 | -.0051 |       |
| 55.000  |        |        | .2120  | .0069  | -.0560 | -.1524 |        | -.1745 | -.1939 | -.1359 | -.0853 | -.0399 | -.0129 | -.0051 |       |
| 70.000  |        |        | .3441  | .1343  | .0690  | .0083  |        | -.1045 | -.1849 | -.1765 | -.0399 | .0337  | .0793  | .0654  |       |
| 90.000  |        | .6197  | .4385  | .2225  | .1252  | .0421  |        | -.0973 | -.2673 | -.2127 | -.0735 | .0129  | .0654  | .0420  |       |
| 120.000 |        |        | .5358  | .3702  | .2600  | .2494  |        | .0838  | -.2368 | -.2248 | -.1974 | .0013  | .0420  | .0166  |       |
| 140.000 |        |        |        |        |        |        |        |        | -.2658 |        |        |        |        |        |       |
| 150.000 |        |        |        |        |        |        |        | .5040  | -.4107 | -.2692 | -.0853 | -.0159 | .0166  |        |       |
| 162.000 |        |        |        |        |        |        |        |        | .1571  |        |        |        |        |        |       |
| 165.000 |        |        |        |        |        |        |        |        | .1991  |        |        |        |        |        |       |
| 169.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 174.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 180.008 | 1.0572 | .7381  | .4828  | .3852  | .3181  | .3236  | .6947  | .5644  | .9316  | -.2052 | -.1009 | -.0239 | .0095  |        |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| .000    | -.1023 | -.1193 | -.1545 | -.1962 | -.1414 | -.1019 | .0442  |        | .3633  | .1084  |        |        |        |        |       |
| 40.000  |        |        | -.1747 | -.1665 | -.1700 | -.0913 | -.0242 |        | .2588  | .0446  |        |        |        |        |       |
| 70.000  |        | -.0270 | .0354  | .1328  | -.0110 | -.0269 | -.1056 |        |        |        |        |        |        |        |       |
| 90.000  |        | .0184  | .0906  | .1685  | -.0615 | -.0840 | -.1619 |        |        |        |        |        |        |        |       |
| 105.000 |        |        | .1441  | .2302  | -.1698 | -.1458 | -.2067 |        |        |        |        |        |        |        |       |
| 110.000 |        |        |        |        |        |        |        | -.3409 |        |        |        |        |        |        |       |
| 120.000 |        |        |        |        |        |        |        | -.2677 |        |        |        |        |        |        |       |
| 130.000 | .0435  | .0888  | .2785  | .3700  | -.2173 | -.1885 | -.2200 |        |        |        |        |        |        |        |       |
| 140.000 |        |        | .2890  | .4393  | -.1597 | -.1108 | -.1906 |        |        |        |        |        |        |        |       |
| 150.000 | .0534  | .1180  | .2854  | .4170  | -.1077 | -.0362 | -.1597 |        |        |        |        |        |        |        |       |
| 160.000 | .0457  |        | .2514  |        | .0744  | -.0959 | -.2699 |        |        |        |        |        |        |        |       |
| 180.000 | .0353  | .0985  | .2295  | .4486  |        |        |        |        |        |        |        |        |        |        |       |

ALPHA ( 1 ) = -3.994 BETA ( 3 ) = .154 MACH = .59594 Q = 593.39 P = 2387.0 RV/L = 4.8386

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |        |        |        |        |       |        |        |        |        |        |        |        |       |
| .000    | 1.0575 | .1980 | -.1797 | -.1637 | -.1916 |        |       | -.1581 | -.1289 | -.1020 | -.0759 | -.0500 | .002   | -.0600 |       |
| 20.000  |        |       | -.1634 | -.1875 | -.2314 | -.2174 |       | -.1810 | -.1448 | -.1167 | -.0871 | -.0678 | -.0659 | -.0737 |       |
| 40.000  |        |       | .0190  | -.1863 | -.2341 | -.2241 |       | -.2491 | -.2167 | -.1509 | -.0871 | -.0678 | -.0659 | -.0737 |       |
| 55.000  |        |       | .1273  | -.0563 | -.1120 | -.1755 |       | -.2087 | -.2215 | -.1509 | -.0871 | -.0678 | -.0659 | -.0737 |       |
| 70.000  |        |       | .2260  | .0317  | -.0317 | -.0703 |       | -.1827 | -.2464 | -.2160 | -.0657 | .0072  | .0577  | .0401  |       |
| 90.000  |        | .4556 | .3127  | .0956  | .0097  | -.0589 |       | -.1952 | -.3538 | -.2627 | -.1056 | -.0065 | .0401  | .0148  |       |
| 120.000 |        |       | .4248  | .2542  | .1471  | .1392  |       | -.0527 | -.3471 | -.2649 | -.2443 | -.0327 | .0148  |        |       |

DATE 10 FEB 76 TABULATED PRESSURE DATA - 0A148 ( AYES 11-073-1 )

(XEB806)

AYES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 1 ) = -3.994 BETA ( 3 ) = .154

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1860 | .1770 | .2040 | .2510 | .3010 | .3780 | .4870 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| X/LB    | 1.0675 | .7330 | .4981 | .4011 | .3260 | .3315 | .6824 | .5255 |       |       |       |       |       |       |       |
| PHI     |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000  |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 105.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 110.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 135.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI .1001 .1225 .1573 .2044 .1479 .1084 .0445 .3820 .1090

40.000 .1534 .1625 .2029 .2044 .1761 .1030 .0101 .2334 .0308

70.000 .0298 .0570 .0024 .0817 .0586 .0648 .1311 .0308 .0308

90.000 .0070 .0120 .0517 .0999 .1279 .1357 .1624 .0308 .0308

105.000 .0046 .0946 .1244 .1244 .2497 .1951 .2370 .0308 .0308

110.000 .0254 .0492 .1604 .2278 .3372 .2775 .2855 .0308 .0308

120.000 .2421 .4383 .2506 .1859 .2359 .2359 .2359 .0308 .0308

135.000 .0499 .1049 .2580 .4914 .1822 .1734 .2082 .0308 .0308

150.000 .0535 .2477 .2477 .2477 .0310 .1843 .2873 .0308 .0308

165.000 .0500 .1196 .2541 .5076 .0308 .1843 .2873 .0308 .0308

180.000 .0500 .1196 .2541 .5076 .0308 .1843 .2873 .0308 .0308

ALPHA ( 1 ) = -4.001 BETA ( 4 ) = 4.235 MACH = .59594 Q = 593.39 P = 2387.0 RM/L = 4.8396

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4870 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 20.000  |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000  |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 55.000  |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| X/LB    | 1.0461 | .1619 | .1873 | .1690 | .1978 | .2010 | .2010 | .1607 | .1770 | .2040 | .2510 | .3010 | .3780 | .4870 | .5740 |
| PHI     |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 20.000  |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000  |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 55.000  |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

**DATE 10 FEB 76**

TABULATED PRESSURE DATA - 0A148 (AME, 11-073-1)

**PAGE 80**

(XZ 9906)

ALPHA ( 1 ) = -4.001      BETA ( 4 ) = 4.235

AMES 11-07310A148) -140A/B/C/R ORB FUSELAGE

SECTION ( 1 ) ORBITER FUSELAGE

|         |        |       |       |       |       |       |       |         |        |        |        |       |       |       |
|---------|--------|-------|-------|-------|-------|-------|-------|---------|--------|--------|--------|-------|-------|-------|
| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1770   | .2040  | .2510  | .3010  | .3780 | .4970 | .5740 |
| PHI     |        |       |       |       |       |       |       |         |        |        |        |       |       |       |
| 180.000 | 1.0461 | .7009 | .4911 | .3853 | .3090 | .3223 | .4897 | -1.1283 | -.1844 | -.0953 | -.0316 |       | .0049 |       |

14.

|  | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 | 2062 | 2063 | 2064 | 2065 | 2066 | 2067 | 2068 | 2069 | 2070 | 2071 | 2072 | 2073 | 2074 | 2075 | 2076 | 2077 | 2078 | 2079 | 2080 | 2081 | 2082 | 2083 | 2084 | 2085 | 2086 | 2087 | 2088 | 2089 | 2090 | 2091 | 2092 | 2093 | 2094 | 2095 | 2096 | 2097 | 2098 | 2099 | 2100 | 2101 | 2102 | 2103 | 2104 | 2105 | 2106 | 2107 | 2108 | 2109 | 2110 | 2111 | 2112 | 2113 | 2114 | 2115 | 2116 | 2117 | 2118 | 2119 | 2120 | 2121 | 2122 | 2123 | 2124 | 2125 | 2126 | 2127 | 2128 | 2129 | 2130 | 2131 | 2132 | 2133 | 2134 | 2135 | 2136 | 2137 | 2138 | 2139 | 2140 | 2141 | 2142 | 2143 | 2144 | 2145 | 2146 | 2147 | 2148 | 2149 | 2150 | 2151 | 2152 | 2153 | 2154 | 2155 | 2156 | 2157 | 2158 | 2159 | 2160 | 2161 | 2162 | 2163 | 2164 | 2165 | 2166 | 2167 | 2168 | 2169 | 2170 | 2171 | 2172 | 2173 | 2174 | 2175 | 2176 | 2177 | 2178 | 2179 | 2180 | 2181 | 2182 | 2183 | 2184 | 2185 | 2186 | 2187 | 2188 | 2189 | 2190 | 2191 | 2192 | 2193 | 2194 | 2195 | 2196 | 2197 | 2198 | 2199 | 2200 | 2201 | 2202 | 2203 | 2204 | 2205 | 2206 | 2207 | 2208 | 2209 | 2210 | 2211 | 2212 | 2213 | 2214 | 2215 | 2216 | 2217 | 2218 | 2219 | 2220 | 2221 | 2222 | 2223 | 2224 | 2225 | 2226 | 2227 | 2228 | 2229 | 2230 | 2231 | 2232 | 2233 | 2234 | 2235 | 2236 | 2237 | 2238 | 2239 | 2240 | 2241 | 2242 | 2243 | 2244 | 2245 | 2246 | 2247 | 2248 | 2249 | 2250 | 2251 | 2252 | 2253 | 2254 | 2255 | 2256 | 2257 | 2258 | 2259 | 2260 | 2261 | 2262 | 2263 | 2264 | 2265 | 2266 | 2267 | 2268 | 2269 | 2270 | 2271 | 2272 | 2273 | 2274 | 2275 | 2276 | 2277 | 2278 | 2279 | 2280 | 2281 | 2282 | 2283 | 2284 | 2285 | 2286 | 2287 | 2288 | 2289 | 2290 | 2291 | 2292 | 2293 | 2294 | 2295 | 2296 | 2297 | 2298 | 2299 | 2300 | 2301 | 2302 | 2303 | 2304 | 2305 | 2306 | 2307 | 2308 | 2309 | 2310 | 2311 | 2312 | 2313 | 2314 | 2315 | 2316 | 2317 | 2318 | 2319 | 2320 | 2321 | 2322 | 2323 | 2324 | 2325 | 2326 | 2327 | 2328 | 2329 | 2330 | 2331 | 2332 | 2333 | 2334 | 2335 | 2336 | 2337 | 2338 | 2339 | 2340 | 2341 | 2342 | 2343 | 2344 | 2345 | 2346 | 2347 | 2348 | 2349 | 2350 | 2351 | 2352 | 2353 | 2354 | 2355 | 2356 | 2357 | 2358 | 2359 | 2360 | 2361 | 2362 | 2363 | 2364 | 2365 | 2366 | 2367 | 2368 | 2369 | 2370 | 2371 | 2372 | 2373 | 2374 | 2375 | 2376 | 2377 | 2378 | 2379 | 2380 | 2381 | 2382 | 2383 | 2384 | 2385 | 2386 | 2387 | 2388 | 2389 | 2390 | 2391 | 2392 | 2393 | 2394 | 2395 | 2396 | 2397 | 2398 | 2399 | 2400 | 2401 | 2402 | 2403 | 2404 | 2405 | 2406 | 2407 | 2408 | 2409 | 2410 | 2411 | 2412 | 2413 | 2414 | 2415 | 2416 | 2417 | 2418 | 2419 | 2420 | 2421 | 2422 | 2423 | 2424 | 2425 | 2426 | 2427 | 2428 | 2429 | 2430 | 2431 | 2432 | 2 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|

**B7/x**

|      |       |       |       |       |       |       |       |       |        |        |
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| 1000 | .6520 | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|

五

| Variable          | Mean   | SD    | Min | Max |
|-------------------|--------|-------|-----|-----|
| Age               | 40.000 | 10.45 | 18  | 68  |
| Gender            | 40.000 | 13.1  | 1   | 1   |
| Marital Status    | 40.000 | 12.68 | 1   | 1   |
| Education         | 40.000 | 15.26 | 1   | 1   |
| Income            | 40.000 | 20.25 | 1   | 1   |
| Health            | 40.000 | 14.63 | 1   | 1   |
| Stress            | 40.000 | 10.00 | 1   | 1   |
| Life Satisfaction | 40.000 | 10.14 | 1   | 1   |

[illegible]

|        |         |        |       |        |        |                 |
|--------|---------|--------|-------|--------|--------|-----------------|
| 90.000 | - .0116 | .0031  | .0330 | -.1020 | -.0328 | -.1433          |
| 90.000 | - .0116 | -.0431 | .0055 | .0422  | -.1676 | - .1611 - .1866 |

|         |       |       |        |        |        |
|---------|-------|-------|--------|--------|--------|
| 105.000 | .0432 | .0386 | -.3196 | -.2334 | -.2544 |
|---------|-------|-------|--------|--------|--------|

110.000  
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870.000  
880.000  
890.000  
900.000  
910.000  
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970.000  
980.000  
990.000  
1000.000

|         |        |        |       |       |        |        |        |        |
|---------|--------|--------|-------|-------|--------|--------|--------|--------|
| 120.000 | -.0094 | -.0114 | .0636 | .0897 | -.4511 | -.3591 | -.3485 | -.3144 |
| 135.000 |        |        |       |       |        |        |        |        |

|         |       |       |        |        |        |
|---------|-------|-------|--------|--------|--------|
| 155,000 | .1730 | .3028 | -.3639 | -.2661 | -.2827 |
| 150,000 | .0245 | .0649 | 1,000  | 1,756  | 2,000  |

[illegible]

|         |       |       |       |       |       |       |       |
|---------|-------|-------|-------|-------|-------|-------|-------|
| 180.000 | .0330 | .0977 | .2355 | .4776 | .1447 | .6756 | .2503 |
|---------|-------|-------|-------|-------|-------|-------|-------|

ALPHA ( 1 ) = -4.013    BETA ( 5 ) = 8.308    MACH = .59594    Q = 993.39

ALPHA ( 1 ) = -4.013    BETA ( 5 ) = 8.308    MACH = .59594    Q = 593.39    P = 2387.0    RN/L = 4.8398

SECTION ( ) ORBITER FUSELAGE

|      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| X/LB | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1590 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|

149

[illegible][illegible][illegible]

|         |         |         |         |         |         |         |         |         |         |         |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 55.0000 | -0.0487 | -0.1691 | -0.1957 | -0.2093 | -0.2369 | -0.2510 | -0.2628 | -0.2691 | -0.2713 | -0.2735 |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|

|         |        |        |        |        |        |        |        |        |        |       |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| 70.0000 | -.0018 | -.1511 | -.1943 | -.1892 | -.2733 | -.3217 | -.2544 | -.0976 | -.0145 | .0327 |
| 70.0000 | -.0020 | -.1507 | -.1935 | -.1882 | -.2720 | -.3204 | -.2532 | -.0968 | -.0137 | .0319 |

[illegible]

|         |      |       |         |         |         |         |         |
|---------|------|-------|---------|---------|---------|---------|---------|
| 140.000 | .000 | .1105 | - .3401 | - .3933 | - .3495 | - .1234 | - .0571 |
| 140.000 | .000 | .1105 | - .3401 | - .3933 | - .3495 | - .1234 | - .0571 |

[illegible]

|     |         |      |         |
|-----|---------|------|---------|
| 151 | 000.000 | 2687 | 000.000 |
| 152 | 000.000 | 2688 | 000.000 |
| 153 | 000.000 | 2689 | 000.000 |
| 154 | 000.000 | 2690 | 000.000 |
| 155 | 000.000 | 2691 | 000.000 |
| 156 | 000.000 | 2692 | 000.000 |
| 157 | 000.000 | 2693 | 000.000 |
| 158 | 000.000 | 2694 | 000.000 |
| 159 | 000.000 | 2695 | 000.000 |
| 160 | 000.000 | 2696 | 000.000 |
| 161 | 000.000 | 2697 | 000.000 |
| 162 | 000.000 | 2698 | 000.000 |
| 163 | 000.000 | 2699 | 000.000 |
| 164 | 000.000 | 2700 | 000.000 |
| 165 | 000.000 | 2701 | 000.000 |
| 166 | 000.000 | 2702 | 000.000 |
| 167 | 000.000 | 2703 | 000.000 |
| 168 | 000.000 | 2704 | 000.000 |
| 169 | 000.000 | 2705 | 000.000 |
| 170 | 000.000 | 2706 | 000.000 |
| 171 | 000.000 | 2707 | 000.000 |
| 172 | 000.000 | 2708 | 000.000 |
| 173 | 000.000 | 2709 | 000.000 |
| 174 | 000.000 | 2710 | 000.000 |
| 175 | 000.000 | 2711 | 000.000 |
| 176 | 000.000 | 2712 | 000.000 |
| 177 | 000.000 | 2713 | 000.000 |
| 178 | 000.000 | 2714 | 000.000 |
| 179 | 000.000 | 2715 | 000.000 |
| 180 | 000.000 | 2716 | 000.000 |
| 181 | 000.000 | 2717 | 000.000 |
| 182 | 000.000 | 2718 | 000.000 |
| 183 | 000.000 | 2719 | 000.000 |
| 184 | 000.000 | 2720 | 000.000 |
| 185 | 000.000 | 2721 | 000.000 |
| 186 | 000.000 | 2722 | 000.000 |
| 187 | 000.000 | 2723 | 000.000 |
| 188 | 000.000 | 2724 | 000.000 |
| 189 | 000.000 | 2725 | 000.000 |
| 190 | 000.000 | 2726 | 000.000 |
| 191 | 000.000 | 2727 | 000.000 |
| 192 | 000.000 | 2728 | 000.000 |
| 193 | 000.000 | 2729 | 000.000 |
| 194 | 000.000 | 2730 | 000.000 |
| 195 | 000.000 | 2731 | 000.000 |
| 196 | 000.000 | 2732 | 000.000 |
| 197 | 000.000 | 2733 | 000.000 |
| 198 | 000.000 | 2734 | 000.000 |
| 199 | 000.000 | 2735 | 000.000 |
| 200 | 000.000 | 2736 | 000.000 |
| 201 | 000.000 | 2737 | 000.000 |
| 202 | 000.000 | 2738 | 000.000 |
| 203 | 000.000 | 2739 | 000.000 |
| 204 | 000.000 | 2740 | 000.000 |
| 205 | 000.000 | 2741 | 000.000 |
| 206 | 000.000 | 2742 | 000.000 |
| 207 | 000.000 | 2743 | 000.000 |
| 208 | 000.000 | 2744 | 000.000 |
| 209 | 000.000 | 2745 | 000.000 |
| 210 | 000.000 | 2746 | 000.000 |
| 211 | 000.000 | 2747 | 000.000 |
| 212 | 000.000 | 2748 | 000.000 |
| 213 | 000.000 | 2749 | 000.000 |
| 214 | 000.000 | 2750 | 000.000 |
| 215 | 000.000 | 2751 | 000.000 |
| 216 | 000.000 | 2752 | 000.000 |
| 217 | 000.000 | 2753 | 000.000 |
| 218 | 000.000 | 2754 | 000.000 |
| 219 | 000.000 | 2755 | 000.000 |
| 220 | 000.000 | 2756 | 000.000 |
| 221 | 000.000 | 2757 | 000.000 |
| 222 | 000.000 | 2758 | 000.000 |
| 223 | 000.000 | 2759 | 000.000 |
| 224 | 000.000 | 2760 | 000.000 |
| 225 | 000.000 | 2761 | 000.000 |
| 226 | 000.000 | 2762 | 000.000 |
| 227 | 000.000 | 2763 | 000.000 |
| 228 | 000.000 | 2764 | 000.000 |
| 229 | 000.000 | 2765 |         |

[illegible]

|         |        |        |        |        |        |
|---------|--------|--------|--------|--------|--------|
| 100.000 | -.9934 | -.2382 | -.1478 | -.0882 | -.0555 |
|---------|--------|--------|--------|--------|--------|

[illegible][illegible][illegible]

|  | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 | 2062 | 2063 | 2064 | 2065 | 2066 | 2067 | 2068 | 2069 | 2070 | 2071 | 2072 | 2073 | 2074 | 2075 | 2076 | 2077 | 2078 | 2079 | 2080 | 2081 | 2082 | 2083 | 2084 | 2085 | 2086 | 2087 | 2088 | 2089 | 2090 | 2091 | 2092 | 2093 | 2094 | 2095 | 2096 | 2097 | 2098 | 2099 | 2100 | 2101 | 2102 | 2103 | 2104 | 2105 | 2106 | 2107 | 2108 | 2109 | 2110 | 2111 | 2112 | 2113 | 2114 | 2115 | 2116 | 2117 | 2118 | 2119 | 2120 | 2121 | 2122 | 2123 | 2124 | 2125 | 2126 | 2127 | 2128 | 2129 | 2130 | 2131 | 2132 | 2133 | 2134 | 2135 | 2136 | 2137 | 2138 | 2139 | 2140 | 2141 | 2142 | 2143 | 2144 | 2145 | 2146 | 2147 | 2148 | 2149 | 2150 | 2151 | 2152 | 2153 | 2154 | 2155 | 2156 | 2157 | 2158 | 2159 | 2160 | 2161 | 2162 | 2163 | 2164 | 2165 | 2166 | 2167 | 2168 | 2169 | 2170 | 2171 | 2172 | 2173 | 2174 | 2175 | 2176 | 2177 | 2178 | 2179 | 2180 | 2181 | 2182 | 2183 | 2184 | 2185 | 2186 | 2187 | 2188 | 2189 | 2190 | 2191 | 2192 | 2193 | 2194 | 2195 | 2196 | 2197 | 2198 | 2199 | 2200 | 2201 | 2202 | 2203 | 2204 | 2205 | 2206 | 2207 | 2208 | 2209 | 2210 | 2211 | 2212 | 2213 | 2214 | 2215 | 2216 | 2217 | 2218 | 2219 | 2220 | 2221 | 2222 | 2223 | 2224 | 2225 | 2226 | 2227 | 2228 | 2229 | 2230 | 2231 | 2232 | 2233 | 2234 | 2235 | 2236 | 2237 | 2238 | 2239 | 2240 | 2241 | 2242 | 2243 | 2244 | 2245 | 2246 | 2247 | 2248 | 2249 | 2250 | 2251 | 2252 | 2253 | 2254 | 2255 | 2256 | 2257 | 2258 | 2259 | 2260 | 2261 | 2262 | 2263 | 2264 | 2265 | 2266 | 2267 | 2268 | 2269 | 2270 | 2271 | 2272 | 2273 | 2274 | 2275 | 2276 | 2277 | 2278 | 2279 | 2280 | 2281 | 2282 | 2283 | 2284 | 2285 | 2286 | 2287 | 2288 | 2289 | 2290 | 2291 | 2292 | 2293 | 2294 | 2295 | 2296 | 2297 | 2298 | 2299 | 2300 | 2301 | 2302 | 2303 | 2304 | 2305 | 2306 | 2307 | 2308 | 2309 | 2310 | 2311 | 2312 | 2313 | 2314 | 2315 | 2316 | 2317 | 2318 | 2319 | 2320 | 2321 | 2322 | 2323 | 2324 | 2325 | 2326 | 2327 | 2328 | 2329 | 2330 | 2331 | 2332 | 2333 | 2334 | 2335 | 2336 | 2337 | 2338 | 2339 | 2340 | 2341 | 2342 | 2343 | 2344 | 2345 | 2346 | 2347 | 2348 | 2349 | 2350 | 2351 | 2352 | 2353 | 2354 | 2355 | 2356 | 2357 | 2358 | 2359 | 2360 | 2361 | 2362 | 2363 | 2364 | 2365 | 2366 | 2367 | 2368 | 2369 | 2370 | 2371 | 2372 | 2373 | 2374 | 2375 | 2376 | 2377 | 2378 | 2379 | 2380 | 2381 | 2382 | 2383 | 2384 | 2385 | 2386 | 2387 | 2388 | 2389 | 2390 | 2391 | 2392 | 2393 | 2394 | 2395 | 2396 | 2397 | 2398 | 2399 | 2400 | 2401 | 2402 | 2403 | 2404 | 2405 | 2406 | 2407 | 2408 | 2409 | 2410 | 2411 | 2412 | 2413 | 2414 | 2415 | 2416 | 2417 | 2418 | 2419 | 2420 | 2421 | 2422 | 2 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|

|     |      |        |        |        |        |        |        |       |       |
|-----|------|--------|--------|--------|--------|--------|--------|-------|-------|
| PHI | .000 | -.1130 | -.1302 | -.1606 | -.2064 | -.1483 | -.1025 | .0480 | .0073 |
|-----|------|--------|--------|--------|--------|--------|--------|-------|-------|

| Variable       | Mean   | SD    | Min | Max |
|----------------|--------|-------|-----|-----|
| Age            | 40.000 | 1.120 | 35  | 45  |
| Gender         | -.1470 | .1860 | 0   | 1   |
| Marital Status | -.1730 | .1025 | 0   | 1   |
| Education      | -.0094 | .0094 | 0   | 1   |
| Income         | .2177  | .0001 | 0   | 1   |
| Health         | .0336  | .0336 | 0   | 1   |
| Stress         | .0932  | .0932 | 0   | 1   |

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DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8806)

ALPHA ( 1 ) = -4.013 BETA ( 5 ) = 8.308

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| 70.000  | -.0617 | -.1117 | -.0814 | .0042  | -.1372 | -.1087 | -.1441 |        |        |        |
| 90.000  | -.0366 | -.0759 | -.0562 | -.0129 | -.2095 | -.1865 | -.2047 |        |        |        |
| 105.000 |        |        | -.0093 | .0064  | -.3574 | -.2530 | -.2573 |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.3294 |        |        |
| 120.000 | -.0413 | -.0633 | -.0295 | -.1078 | -.5966 | -.4543 | -.4064 | -.3236 |        |        |
| 135.000 |        |        | .0861  | .1583  | -.5051 | -.3602 | -.3369 |        |        |        |
| 150.000 | -.0347 | -.0105 | .1013  | .4512  | -.4478 | -.3906 | -.3120 |        |        |        |
| 165.000 | -.0273 |        | .1282  |        | -.2821 | -.3723 | -.2973 |        |        |        |
| 180.000 | -.0202 | .0418  | .1748  | .3714  |        |        |        |        |        |        |

ALPHA ( 2 ) = .023 BETA ( 1 ) = -7.929 MACH = .59630 Q = 593.84 P = 2385.7 RN/L = 4.8179

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580 | .1860  | .1770    | .2040    | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|--------|--------|--------|--------|-------|--------|----------|----------|--------|--------|--------|--------|--------|
| PHI     |        |       |        |        |        |        |       |        |          |          |        |        |        |        |        |
| 000.000 | 1.0391 | .3283 | -.0591 | -.0979 | .1230  |        |       | -.1372 |          | -.1158   | -.0982 | -.0692 | -.0488 | -.0218 | -.0219 |
| 20.000  |        |       | -.0159 | -.0952 | -.1730 | -.1958 |       | -.1722 |          | -.1471   |        |        |        |        |        |
| 40.000  |        |       | .2151  | -.0441 | -.1254 | -.1592 |       | -.2272 |          | -.2056   | -.1389 | -.0912 | -.0761 | -.0610 | -.0480 |
| 55.000  |        |       | .4050  | .1922  | .1076  | .0227  |       | -.0439 |          | -.0880   |        |        |        |        |        |
| 70.000  |        |       | .5050  | .2922  | .2008  | .1316  |       | .0066  |          | -.0914   | -.1256 | -.0168 | .0256  | .0582  |        |
| 90.000  |        | .7425 | .5551  | .3499  | .2409  | .1676  |       | .0241  |          | -.1526   | -.1570 | -.0555 | .0108  | .0395  |        |
| 120.000 |        |       | .5556  | .3946  | .2924  | .2833  |       | .1726  |          | -.2678   | -.2230 | -.2166 | -.0668 | -.0450 |        |
| 140.000 |        |       | .4549  | .3184  | .2497  | .2618  |       | .5147  |          | -.4630   | -.3968 | -.1539 | -.0771 | -.0554 |        |
| 150.000 |        |       |        |        |        |        |       | .1860  |          |          |        |        |        |        |        |
| 151.000 |        |       |        |        |        |        |       | .1776  |          |          |        |        |        |        |        |
| 162.000 |        |       |        |        |        |        |       |        | -.1.1217 | -.2914   | -.2914 | -.1652 | -.0690 | -.0590 |        |
| 165.000 |        |       |        |        |        |        |       |        |          |          |        |        |        |        |        |
| 169.000 |        |       |        |        |        |        |       |        |          |          |        |        |        |        |        |
| 174.000 |        |       |        |        |        |        |       |        |          |          |        |        |        |        |        |
| 180.000 | 1.0391 | .5843 | .3276  | .2347  | .1834  | .2058  | .6573 | .3026  |          | -.1.3574 | -.2661 | -.1594 | -.0924 | -.0637 |        |
| X/LB    | .6520  | .7290 | .7790  | .8210  | .8790  | .9210  | .9600 | .9990  | 1.0180   | 1.0460   |        |        |        |        |        |

PHI

| X/LB    | .0000  | .0074  | .1185  | -.1654 | -.1266 | -.0937 | .0485  |
|---------|--------|--------|--------|--------|--------|--------|--------|
| 000.000 | -.0511 | -.0774 | -.1185 | -.1654 | -.1266 | -.0937 | .0485  |
| 40.000  | -.1025 |        | -.1175 | -.1753 | -.1542 | -.0768 | -.0345 |
| 70.000  | -.0857 | -.0693 | .0381  | .1768  | .0347  | .0202  | -.0785 |
| 90.000  | -.0487 | -.0188 | .0929  | .2263  | .0043  | -.0436 | -.146  |
| 105.000 |        |        | .1362  | .3504  | -.0794 | -.0958 | -.1857 |
| 110.000 |        |        |        |        |        |        |        |
| 120.000 | -.0756 | .0094  | .1965  | .5006  | -.1540 | -.1264 | -.1658 |
| 135.000 |        |        | .2416  | .4403  | -.1383 | -.0996 | -.1759 |
| 150.000 | -.0413 | .0341  | .2233  | .2437  | -.1467 | -.0756 | -.1526 |



ALPHA ( 2 ) = .035 BETA ( 3 ) = .147 MACH = .59630 Q = 593.84 P = 2385.7 RN/L = 4.8179 (XEB806)

SECTION ( 1 ) ORBITTER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580  | .1770    | .2040    | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|--------|--------|--------|--------|--------|----------|----------|--------|--------|--------|--------|--------|
| PHI     | 1.0889 | .3707 | -.0299 | -.0803 | -.1016 | -.1430 | -.1129 | -.0998   | -.0755   | -.0458 | -.0269 | -.0017 | -.0084 |        |
| 20.000  |        |       | -.0065 | -.0565 | -.1308 | -.1203 | -.1296 | -.1116   | -.1420   | -.0883 | -.0429 | -.0276 | -.0182 | -.0032 |
| 40.000  |        |       | .1277  | -.0499 | -.1119 | -.0773 | -.1500 | -.1724   | -.2211   | -.2132 | -.0884 | -.0273 | -.0048 |        |
| 55.000  |        |       | .2296  | .0519  | -.0137 | -.0230 | -.1351 | -.2211   | -.3277   | -.2508 | -.1129 | -.0326 | -.0110 |        |
| 70.000  |        |       | .2803  | .0834  | .0141  | -.0230 | -.1380 | -.3277   | -.3504   | -.2964 | -.2346 | -.0408 | -.0034 |        |
| 90.000  |        | .4584 | .3271  | .1280  | .0380  | -.0127 | -.1483 | -.3504   | -.4082   | -.3031 | -.1234 | -.0427 | -.0113 |        |
| 120.000 |        |       | .3802  | .2242  | .1249  | .1333  | -.0268 | -.4082   | -.5635   |        |        |        |        |        |
| 140.000 |        |       | .3954  | .2893  | .2052  | .2175  | .3732  | -.0065   |          |        |        |        |        |        |
| 150.000 |        |       |        |        |        |        |        | .0325    |          |        |        |        |        |        |
| 162.000 |        |       |        |        |        |        |        |          | -.1.0839 | -.2402 | -.1273 | -.0444 | -.0092 |        |
| 165.000 |        |       |        |        |        |        |        |          |          |        |        |        |        |        |
| 169.000 |        |       |        |        |        |        |        |          |          |        |        |        |        |        |
| 174.000 |        |       |        |        |        |        |        |          |          |        |        |        |        |        |
| 180.000 | 1.0889 | .5932 | .3890  | .2958  | .2211  | .2551  | .6273  | -.1.3016 | -.2222   | -.1119 | -.0415 | -.0092 |        |        |
| X/LB    | .6520  | .7290 | .7790  | .8210  | .8790  | .9210  | .9600  | .9990    | 1.0180   | 1.0460 |        |        |        |        |

|         |        |       |        |        |        |        |        |          |          |        |        |        |        |        |
|---------|--------|-------|--------|--------|--------|--------|--------|----------|----------|--------|--------|--------|--------|--------|
| PHI     | 1.0889 | .3707 | -.0299 | -.0803 | -.1016 | -.1430 | -.1129 | -.0998   | -.0755   | -.0458 | -.0269 | -.0017 | -.0084 |        |
| 20.000  |        |       | -.0065 | -.0565 | -.1308 | -.1203 | -.1296 | -.1116   | -.1420   | -.0883 | -.0429 | -.0276 | -.0182 | -.0032 |
| 40.000  |        |       | .1277  | -.0499 | -.1119 | -.0773 | -.1500 | -.1724   | -.2211   | -.2132 | -.0884 | -.0273 | -.0048 |        |
| 55.000  |        |       | .2296  | .0519  | -.0137 | -.0230 | -.1351 | -.2211   | -.3277   | -.2508 | -.1129 | -.0326 | -.0110 |        |
| 70.000  |        |       | .2803  | .0834  | .0141  | -.0230 | -.1380 | -.3277   | -.3504   | -.2964 | -.2346 | -.0408 | -.0034 |        |
| 90.000  |        | .4584 | .3271  | .1280  | .0380  | -.0127 | -.1483 | -.3504   | -.4082   | -.3031 | -.1234 | -.0427 | -.0113 |        |
| 120.000 |        |       | .3802  | .2242  | .1249  | .1333  | -.0268 | -.4082   | -.5635   |        |        |        |        |        |
| 140.000 |        |       | .3954  | .2893  | .2052  | .2175  | .3732  | -.0065   |          |        |        |        |        |        |
| 150.000 |        |       |        |        |        |        |        | .0325    |          |        |        |        |        |        |
| 162.000 |        |       |        |        |        |        |        |          | -.1.0839 | -.2402 | -.1273 | -.0444 | -.0092 |        |
| 165.000 |        |       |        |        |        |        |        |          |          |        |        |        |        |        |
| 169.000 |        |       |        |        |        |        |        |          |          |        |        |        |        |        |
| 174.000 |        |       |        |        |        |        |        |          |          |        |        |        |        |        |
| 180.000 | 1.0889 | .5932 | .3890  | .2958  | .2211  | .2551  | .6273  | -.1.3016 | -.2222   | -.1119 | -.0415 | -.0092 |        |        |
| X/LB    | .6520  | .7290 | .7790  | .8210  | .8790  | .9210  | .9600  | .9990    | 1.0180   | 1.0460 |        |        |        |        |

ALPHA ( 2 ) = .050 BETA ( 4 ) = .4214 MACH = .59630 Q = 593.84 P = 2385.7 RN/L = 4.8179

SECTION ( 1 ) ORBITTER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | 1.0682 | .3461 | -.0424 | -.0660 | -.1146 | -.1424 | -.1234 | -.1070 | -.0865 | -.0542 | -.0317 | -.0118 | -.0185 |       |
| 20.000  |        |       | -.0323 | -.0835 | -.1441 | -.1283 | -.1275 | -.1153 | -.0938 | -.0394 | -.0185 | -.0164 | -.0066 |       |
| 40.000  |        |       | .0521  | -.0789 | -.1319 | -.1170 | -.1411 | -.1911 | -.2076 | -.0938 | -.0394 | -.0164 | -.0066 |       |
| 55.000  |        |       | .1225  | -.0291 | -.0789 | -.1170 | -.1758 | -.2076 | -.2707 | -.2467 | -.1052 | -.0406 | -.0000 |       |
| 70.000  |        |       | .1621  | -.0135 | -.0775 | -.0883 | -.1961 | -.2707 | -.3005 | -.2905 | -.1331 | -.0394 | -.0005 |       |
| 90.000  |        | .2848 | .2017  | .0057  | -.0633 | -.0976 | -.2260 | -.3005 | -.3431 | -.2580 | -.0586 | -.0176 |        |       |
| 120.000 |        |       | .2730  | .1219  | .0208  | .0368  | -.1543 | -.4478 | -.3431 |        |        |        |        |       |

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TABULATED PRESSURE DATA - 0A148 (AVES 11-073-1)

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(XE8806)

ALPHA ( 2 ) = .050 BETA ( 4 ) = 4.214

AVES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1860 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 1.0682  | .5723 | .3746 | .2710 | .2151 | .2427 | .5619 |       |       |       |       |       |       |       |       |       |
| .6520   | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 |       |       |       |       |       |       |       |       |       |

X/LB

PHI

|         |        |        |        |        |        |        |        |       |  |  |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|--|--|--|--|--|--|--|
| .000    | -.0507 | -.0778 | -.1176 | -.1662 | -.1228 | -.0892 | .0559  |       |  |  |  |  |  |  |  |
| 40.000  | -.0588 | -.1070 | -.1551 | -.1611 | -.0875 | -.0029 | .3683  | .1099 |  |  |  |  |  |  |  |
| 70.000  | -.1456 | -.1597 | -.0823 | .0184  | -.079  | -.1449 | .2357  | .0105 |  |  |  |  |  |  |  |
| 90.000  | -.0946 | -.1041 | -.0281 | .0209  | -.1843 | -.1973 |        |       |  |  |  |  |  |  |  |
| 105.000 |        |        | .0210  | .0270  | -.3092 | -.2482 |        |       |  |  |  |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        |       |  |  |  |  |  |  |  |
| 120.000 | -.0417 | -.0318 | .0843  | .1024  | -.4349 | -.3211 | -.3482 |       |  |  |  |  |  |  |  |
| 135.000 |        |        | .1570  | .3004  | -.3738 | -.2766 | -.2913 |       |  |  |  |  |  |  |  |
| 150.000 | -.0085 | .0371  | .1851  | .3698  | -.3282 | -.2632 |        |       |  |  |  |  |  |  |  |
| 165.000 | -.0037 | .1871  | .1871  | -.1895 | -.2994 | -.2872 |        |       |  |  |  |  |  |  |  |
| 180.000 | -.0050 | .0636  | .2038  | .3978  |        |        |        |       |  |  |  |  |  |  |  |

ALPHA ( 2 ) =

.045 BETA ( 5 ) =

8.269 MACH =

.59630 Q

= 593.84 P

= 2385.7 RM/L

= 4.8178

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB     | .0000  | .0080  | .0230  | .0460  | .0700 | .1120 | .1580 | .1860 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|----------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI      |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |
| 20.000   |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |
| 40.000   |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |
| 55.000   |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |
| 70.000   |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |
| 90.000   |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |
| 120.000  |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |
| 140.000  |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |
| 150.000  |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |
| 151.000  |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |
| 162.000  |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |
| 165.000  |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |
| 169.000  |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |
| 174.000  |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |
| 1.0151   | .3246  |        |        |        |       |       |       |       |       |       |       |       |       |       |       |
| .0490    | -.0639 | -.1027 | -.1542 | -.1579 |       |       |       |       |       |       |       |       |       |       |       |
| .0226    | -.1186 | -.1565 | -.1446 |        |       |       |       |       |       |       |       |       |       |       |       |
| .0150    | -.1041 | -.1407 | -.1581 |        |       |       |       |       |       |       |       |       |       |       |       |
| .0416    | -.1142 | -.1512 | -.1538 |        |       |       |       |       |       |       |       |       |       |       |       |
| .0759    | -.1037 | -.1656 | -.1759 |        |       |       |       |       |       |       |       |       |       |       |       |
| .1455    | .0010  | -.0986 | -.0771 |        |       |       |       |       |       |       |       |       |       |       |       |
| .2200    | .1522  | .0574  | .0623  |        |       |       |       |       |       |       |       |       |       |       |       |
| 1.1234   |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |
| -.2986   |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |
| -.2360   |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |
| -.1.1071 |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |
| -.2623   |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |
| -.1645   |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |
| -.0956   |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |
| -.0691   |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |

.5031

AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

540 BETA (5)

DEPENDENT VARIABLE CP

5749

-0717

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**OVER:**

1. **Introduction**

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**THE UNIVERSITY OF CHICAGO**

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB806)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 3 ) = 3.911 BETA ( 1 ) = -7.932

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9800 .9990 1.0180 1.0460

PHI

70.000 -.1885 -.1411 -.0025 .1773 .0474 .0339 -.0627  
 90.000 -.1363 -.0832 .0552 .2293 .0090 -.0403 -.1371  
 105.000 .1025 .3736 -.0686 -.0905 -.1813  
 110.000  
 120.000 -.1868 -.0729 .1360 .5193 -.1788 -.1346 -.1645  
 135.000 .1924 .3707 .1885 -.1287 -.1988  
 150.000 -.0978 -.0092 .1882 .1279 -.2097 -.1080 -.1719  
 165.000 -.0760 .1506 .1008 -.0574 -.2794  
 180.000 -.0746 -.0102 .1248 .1869

ALPHA ( 3 ) = 3.915 BETA ( 2 ) = -3.897 MACH = .59594 Q = 593.13 P = 2385.8 RV/L = 4.8145

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0060 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5742

PHI

20.000 1.0726 .5277 .1249 .0348 -.0175  
 40.000 .1657 .0405 -.0355  
 55.000 .3175 .0987 .0168  
 70.000 .4020 .2101 .1323 .0447  
 90.000 .4184 .1311 .0777  
 100.000 .5735 .2357 .1464 .0925  
 120.000 .4298 .2357 .1564 .1760  
 140.000 .4013  
 150.000 .3177 .2182 .1428 .1798  
 162.000  
 165.000  
 169.000  
 174.000  
 180.000

X/LB

1.0726 .4571 .2464 .1641 .1205 .1655 .5923 .4478  
 .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

40.000 .0232 -.0176 -.0639 -.1258 -.0952 -.0754 .0710  
 70.000 .0044 -.0563 -.1179 -.1309 -.0528 -.0145  
 90.000 -.2340 -.1805 -.0522 .1182 .0122 -.0125 -.0907  
 105.000 -.1628 -.1184 .0131 .1618 -.0571 .0834 .1605  
 110.000 .0774 .2522 -.1468 .1399 .2104  
 120.000 .1667 .3423 -.2420 -.1902 -.1568  
 135.000 .2213 .3098 -.2403 -.1673 -.2200  
 150.000 -.0519 .0284 .2138 .2220 -.2278 -.1587 -.1965

REPRODUCIBILITY OF THE  
DATA

DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XF8806)

ALPHA ( 3 ) = 3.915 BETA ( 2 ) = -3.897

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0130 1.0460

PHI

165.000 -.0373 .1935  
180.000 -.0349 .0342 .1717 .3081  
- .0092 -.1484 -.2755

ALPHA ( 3 ) = 3.912 BETA ( 3 ) = .150 MACH = .59594 Q = 593.13 P = 2385.8 RN/L = 4.8146

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1666 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.0794 .5340 .1223 .0444 -.0141 -.0693 -.0555 -.0345 -.0190 .0084 .0391 .0471  
20.000 .1416 .0468 -.0417 -.0722 -.0715 -.0656 -.0644 -.0480 -.0003 .0173 .0259 .0648  
40.000 .2447 .0673 -.0100 -.0374 -.0806 -.0844 -.1438 -.2248 -.1150 -.0560 -.0332  
55.003 .2921 .1186 .0476 -.0187 -.0950 -.1438 -.2060 -.2599 -.1315 -.0620 -.0374  
70.000 .2973 .1196 .0396 .0014 -.1127 -.1257 -.1979 -.2599 -.1315 -.0620 -.0374  
90.000 .3106 .1273 .0504 .0060 -.1257 -.1257 -.3719 -.3220 -.2554 -.0774 -.0587  
120.000 .3170 .1759 .0862 .1136 -.0204 -.4617 -.6392 -.3541 -.1466 -.0637 -.0335  
140.000 .2923 .1957 .1157 .1544 .3342  
150.000  
151.000  
162.000  
165.000  
169.000  
174.000  
180.000-.0542  
-.0343

.4111

1.0794 .4583 .2664 .1797 .1316 .1823 .5699 .3839

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .0220 -.0122 -.0650 -.1261 -.0981 -.0757 .0680  
40.000 .0115 -.0538 -.1136 -.1361 -.1361 -.0653 .0040  
70.000 .2448 -.2080 .0606 .0708 -.0708 -.0613 -.1247  
90.000 .1692 -.1297 .0119 .0781 .1315 .1310 .1798  
105.000 .0650 .0935 .2252 .1861 .2311  
110.000  
120.000 .1441 .0967 .3073 .2471 .2386  
135.000 .1958 .2484 .2905 .2116 .2390  
150.000 .1948 .3639 .2483 .2129 .2270  
165.000 .1799 .1119 .2272 .2614  
180.000 .1761 .4141  
4019 .1166  
2806 .0357  
-.3369  
-.2657

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8808)

ALPHA ( 3 ) = 3.921 BETA ( 4 ) = 4.204 MACH = .59594 Q = 593.13 P = 2385.8 RN/L = 4.8146

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770 | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|-------|---------|--------|--------|--------|--------|-------|
| PHI     | .000   | .5152 | .1100 | .0364 | -.0288 |        |       | -.0717 |       | -.0645  | -.0435 | -.0220 | .0028  | .0335  | .0320 |
| 20.000  | 1.0584 |       | .1078 | .0163 | -.0584 | -.0826 |       | -.0870 |       | -.0653  |        |        |        |        |       |
| 40.000  |        |       | .1581 | .0141 | -.0452 | -.0691 |       | -.0952 |       | -.1096  | -.0761 | -.0276 | .0009  | .0134  | .0601 |
| 55.000  |        |       | .1746 | .0216 | -.0341 | -.0786 |       | -.1484 |       | -.1975  |        |        |        |        |       |
| 70.000  |        |       | .1772 | .0139 | -.0521 | -.0678 |       | -.1733 |       | -.2559  | -.2530 | -.1423 | -.0739 | -.0488 |       |
| 90.000  |        | .2547 | .1955 | .0216 | -.0457 | -.0750 |       | -.1959 |       | -.3597  | -.2820 | -.1478 | -.0646 | -.0375 |       |
| 120.000 |        |       | .2257 | .0879 | .0019  | .0309  |       | -.1263 |       | -.4401  | -.3424 | -.2500 | -.0600 | -.0392 |       |
| 140.000 |        |       | .2352 | .1491 | .0744  | .1100  |       | .2346  |       | -.5292  | -.3235 | -.1435 | -.0591 | -.0372 |       |
| 150.000 |        |       |       |       |        |        |       | -.1716 |       | -.6832  |        |        |        |        |       |
| 151.000 |        |       |       |       |        |        |       | -.1498 |       |         |        |        |        |        |       |
| 162.000 |        |       |       |       |        |        |       |        |       | -.11999 | -.2697 | -.1380 | -.0634 | -.0427 |       |
| 165.000 |        |       |       |       |        |        |       | .3542  |       |         |        |        |        |        |       |
| 169.000 |        |       |       |       |        |        |       |        |       |         |        |        |        |        |       |
| 174.000 |        |       |       |       |        |        |       |        |       |         |        |        |        |        |       |
| 180.000 | 1.0584 | .4248 | .2566 | .1740 | .1256  | .1670  | .5137 | .3597  |       | -.14160 | -.2653 | -.1402 | -.0713 | -.0473 |       |

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

| X/LB    | .0210  | -.0152 | -.0660 | -.1251 | -.0974 | -.0754 | .0661  |  | .4044 | .1149 |
|---------|--------|--------|--------|--------|--------|--------|--------|--|-------|-------|
| 40.000  | .0244  |        | -.0535 | -.1135 | -.1396 | -.0684 | .0081  |  |       |       |
| 70.000  | -.2588 | -.2339 | -.1247 | .0045  | -.1196 | -.1068 | -.1537 |  | .2629 | .0232 |
| 90.000  | -.1757 | -.1556 | -.0554 | .0001  | -.1934 | -.1688 | -.1998 |  |       |       |
| 105.000 |        | .0014  | .0183  | .0163  | -.3016 | -.2272 | -.2485 |  |       |       |
| 110.000 |        |        |        |        |        |        |        |  |       |       |
| 120.000 | -.0834 | -.0602 | .0502  | .0777  | -.4150 | -.3159 | -.2951 |  |       |       |
| 135.000 |        |        | .1374  | .3064  | -.3915 | -.2797 | -.2846 |  |       |       |
| 150.000 | -.0324 | .0143  | .1536  | .2814  | -.3573 | -.2934 | -.2713 |  |       |       |
| 165.000 | -.0307 |        | .1664  |        | -.2265 | -.3152 | -.2651 |  |       |       |
| 180.000 | -.0380 | .0367  | .1751  | .3197  |        |        |        |  |       |       |

ALPHA ( 3 ) = 3.925 BETA ( 5 ) = 8.248 MACH = .59594 Q = 593.13 P = 2385.8 RN/L = 4.8146

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460  | .0700  | .1120  | .1580 | .1660  | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|--------|--------|--------|-------|--------|-------|--------|--------|--------|--------|--------|-------|
| PHI     | .000   | .4857 | .0931 | .0159  | -.0490 |        |       | -.0839 |       | -.0833 | -.0637 | -.0428 | -.0076 | .0171  | .0187 |
| 20.000  | 1.0053 |       | .0563 | -.0135 | -.0884 | -.1023 |       | -.1079 |       | -.1102 |        |        |        |        |       |
| 40.000  |        |       | .0578 | -.0495 | -.0963 | -.1144 |       | -.1321 |       | -.1561 | -.1236 | -.0699 | -.0307 | -.0125 | .0557 |
| 55.000  |        |       | .0532 | -.0778 | -.1148 | -.1432 |       | -.1993 |       | -.2411 |        |        |        |        |       |
| 70.000  |        |       | .0527 | -.0805 | -.1393 | -.1305 |       | -.2257 |       | -.2869 | -.2764 | -.1500 | -.0865 | -.0534 |       |
| 90.000  |        | .0733 | .0752 | -.0814 | -.1379 | -.1432 |       | -.2590 |       | -.4223 | -.2684 | -.1532 | -.0649 | -.0389 |       |
| 120.000 |        |       | .1064 | -.0128 | -.0918 | -.0559 |       | -.2405 |       | -.5178 | -.3861 | -.2516 | -.0562 | -.0343 |       |



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEBB06)

ALPHA ( 4 ) = 7.957 BETA ( 1 ) = -7.908

## SECTION ( 1 ) ORBITTER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |         |        |        |        |        |       |
| 180.000 | 1.0007 | .2894  | .0940  | .0448  | .0072  | .0660  |        | .1774  |        | -1.7758 | -.3102 | -.1770 | -.1108 | -.0988 |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460  |        |        |        |        |       |
| PHI     |        |        |        |        |        |        |        |        |        |         |        |        |        |        |       |
| .000    | .0816  | .0426  | -.0056 | -.0744 | -.0580 | -.0508 | .0801  |        | .4467  | .1269   |        |        |        |        |       |
| 40.000  | .0995  | -.0106 | -.0106 | -.0650 | -.0992 | -.0103 | -.0035 |        | .3436  | .0745   |        |        |        |        |       |
| 70.000  | -.3044 | -.2051 | -.0319 | .1726  | .0534  | .0428  | -.0604 |        |        |         |        |        |        |        |       |
| 90.000  | -.2406 | -.1478 | .0186  | .2277  | .0251  | -.0286 | -.1368 |        |        |         |        |        |        |        |       |
| 105.000 |        | .0597  | -.0597 | .3927  | -.0468 | -.0793 | -.1760 |        |        |         |        |        |        |        |       |
| 110.000 |        |        |        |        |        |        |        | -.3189 |        |         |        |        |        |        |       |
| 120.000 | -.3322 | -.1697 | .0652  | .5448  | -.2145 | -.1536 | -.1757 | -.2742 |        |         |        |        |        |        |       |
| 135.000 |        |        | .1382  | .3306  | -.2487 | -.1647 | -.2226 |        |        |         |        |        |        |        |       |
| 150.000 | -.1438 | -.0453 | .1500  | -.0573 | -.2771 | -.1318 | -.1855 |        |        |         |        |        |        |        |       |
| 165.000 | -.1199 |        | .1307  | -.0904 | -.0662 | -.2892 |        |        |        |         |        |        |        |        |       |
| 180.000 | -.1069 | -.0270 | .1061  | .0875  |        |        |        |        |        |         |        |        |        |        |       |

ALPHA ( 4 ) = 7.966 BETA ( 2 ) = -3.891 MACH = .59612 Q = 593.49 P = 2385.7 RN/L = 4.8178

## SECTION ( 1 ) ORBITTER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580 | .1660  | .1770   | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|--------|--------|--------|--------|-------|--------|---------|---------|--------|--------|--------|--------|-------|
| PHI     |        |       |        |        |        |        |       |        |         |         |        |        |        |        |       |
| 20.000  | 1.0307 | .6854 | .2692  | .1506  | .0865  | .0140  |       | -.0077 |         | -.0068  | -.0014 | .0269  | .0499  | .0883  | .0860 |
| 40.000  |        |       | .3149  | .1690  | .0758  | .0736  |       | -.0049 |         | -.0109  |        | -.0082 | .0717  | .0944  | .1312 |
| 55.000  |        |       | .4372  | .2250  | .1356  | .0657  |       | -.0173 |         | -.0823  | .0199  | .0532  |        |        |       |
| 70.000  |        |       | .4528  | .2688  | .1766  | .0872  |       | -.0070 |         | -.1405  | -.2081 | -.1195 | -.0813 | -.0696 |       |
| 90.000  |        | .5242 | .4142  | .2421  | .1461  | .0912  |       | -.0235 |         | -.2272  | -.2334 | -.1468 | -.1003 | -.0761 |       |
| 120.000 |        |       | .3984  | .2157  | .1341  | .0878  |       | -.0340 |         | -.3290  | -.3571 | -.3624 | -.2226 | -.2154 |       |
| 140.000 |        |       | .3076  | .1690  | .0789  | .1182  |       | .0486  |         | -.4604  | -.4787 | -.2029 | -.1156 | -.0991 |       |
| 150.000 |        |       | .1992  | .1093  | .0502  | .1064  |       | .3843  |         | .0090   |        |        |        |        |       |
| 161.000 |        |       |        |        |        |        |       | -.0225 |         | -.0225  |        |        |        |        |       |
| 162.000 |        |       |        |        |        |        |       |        | -1.4106 | -.3305  | -.1835 | -.0984 | -.0792 |        |       |
| 165.000 |        |       |        |        |        |        |       |        |         |         |        |        |        |        |       |
| 169.000 |        |       |        |        |        |        |       |        |         |         |        |        |        |        |       |
| 174.000 |        |       |        |        |        |        |       |        |         |         |        |        |        |        |       |
| 180.000 | 1.0307 | .2924 | .1184  | .0803  | .0425  | .1007  | .5451 | .3924  |         |         |        |        |        |        |       |
| X/LB    | .6520  | .7290 | .7790  | .8210  | .8790  | .9210  | .9600 | .9990  | 1.0180  | 1.0460  |        |        |        |        |       |
| PHI     |        |       |        |        |        |        |       |        |         |         |        |        |        |        |       |
| .000    | .0838  | .0473 | -.0102 | -.0721 | -.0555 | -.0473 | .0873 |        | .2760   | -1.6161 | -.2828 | -.1578 | -.0772 | -.0662 |       |
| 40.000  | .0962  | .0119 | -.0119 | -.0550 | -.0968 | -.0164 | .0147 |        |         |         |        |        |        |        |       |

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TABULATED PRESSURE DATA - 0A148 ( ANES 11-073-1 )

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(XE8806)

ALPHA ( 4 ) = 7.966 BETA ( 2 ) = -3.891

ANES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|--------|--------|--------|-------|--------|--------|
| PHI     |        |        |        |       |        |        |        |       |        |        |
| 70.000  | -.3495 | -.2501 | -.0914 | .1210 | .0004  | .0014  | -.0744 |       |        |        |
| 90.000  | -.2615 | -.1863 | -.0201 | .1615 | -.0454 | -.0695 | -.1496 |       |        |        |
| 105.000 |        |        | .0338  | .2769 | -.1282 | -.1311 | -.2017 |       |        |        |
| 110.000 |        |        |        |       |        |        | -.3150 |       |        |        |
| 120.000 | -.2384 | -.0827 | .1554  | .2164 | -.2581 | -.1910 | -.1944 |       |        |        |
| 135.000 |        |        | .1921  | .1556 | -.2669 | -.1885 | -.2305 |       |        |        |
| 150.000 | -.0998 | .0013  | .1922  | .1153 | -.2497 | -.1699 | -.2023 |       |        |        |
| 165.000 | -.0835 |        | .1633  |       | -.0385 | -.1480 | -.2685 |       |        |        |
| 180.000 | -.0642 | .0120  | .1441  | .2757 |        |        |        |       |        |        |

ALPHA ( 4 ) = 7.972 BETA ( 3 ) = .143 MACH = .59612 Q = .59349 P = .2385.7 RN/L = 4.8178

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040   | .2510  | .3010  | .3780  | .4670  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |         |        |        |        |        |       |
| .000    | 1.0385 | .6902  | .2780  | .1608  | .0882  |        |        | -.0010 |        | -.0022  | .0048  | .0306  | .0542  | .0934  | .1038 |
| 20.000  |        |        | .2987  | .1549  | .0652  | .0151  |        | -.0044 |        | -.0128  |        |        |        |        |       |
| 40.000  |        |        | .3558  | .1757  | .0950  | .0384  |        | -.0085 |        | -.0394  | -.0210 | .0230  | .0473  | .0677  | .1294 |
| 55.000  |        |        | .3341  | .1590  | .0851  | .0052  |        | -.0775 |        | -.1505  |        |        |        |        |       |
| 70.000  |        |        | .2951  | .1312  | .0503  | .0138  |        | -.0993 |        | -.2037  | -.2523 | -.1523 | -.1040 | -.0879 |       |
| 90.000  | .3696  |        | .2804  | .1187  | .0503  | .0078  |        | -.1072 |        | -.2938  | -.2731 | -.1655 | -.1069 | -.0900 |       |
| 120.000 |        |        | .2357  | .1036  | .0304  | .0737  |        | -.0224 |        | -.3951  | -.3589 | -.3192 | -.1571 | -.1338 |       |
| 140.000 |        |        |        |        |        |        |        |        |        | -.5193  | -.4096 | -.3129 | -.0795 | -.0680 |       |
| 150.000 |        |        | .1782  | .0966  | .0345  | .0919  |        | .3036  |        | -.0890  |        |        |        |        |       |
| 151.000 |        |        |        |        |        |        |        |        |        | -.0978  |        |        |        |        |       |
| 162.000 |        |        |        |        |        |        |        |        |        | -.13444 | -.2996 | -.1540 | -.0742 | -.0490 |       |
| 165.000 |        |        |        |        |        |        |        | .3558  |        |         |        |        |        |        |       |
| 169.000 |        |        |        |        |        |        |        | .3174  |        |         |        |        |        |        |       |
| 174.000 |        |        |        |        |        |        |        |        |        |         |        |        |        |        |       |
| 180.000 | .0385  | .2887  | .1403  | .0880  | .0491  | .1104  | .5157  |        |        |         |        |        |        |        |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460  |        |        |        |        |       |
| PHI     |        |        |        |        |        |        |        |        |        |         |        |        |        |        |       |
| .000    | .0908  | .0522  | -.0030 | -.0674 | -.0571 | -.0455 | .0898  |        |        |         |        |        |        |        |       |
| 40.000  | .0732  |        | .0093  | -.0575 | -.1036 | -.0354 | .0287  |        |        |         |        |        |        |        |       |
| 70.000  | -.3697 | -.2758 | -.1227 | .0577  | -.0648 | -.0510 | -.1115 |        |        |         |        |        |        |        |       |
| 90.000  | -.2762 | -.2042 | -.0382 | .0805  | -.1308 | -.1267 | -.1760 |        |        |         |        |        |        |        |       |
| 105.000 |        |        | .0425  | .1130  | -.2070 | -.1773 | -.2224 |        |        |         |        |        |        |        |       |
| 110.000 |        |        |        |        |        |        |        |        |        |         |        |        |        |        |       |
| 125.000 | -.1640 | -.0626 | .1100  | .1287  | -.2956 | -.2322 | -.2315 |        |        |         |        |        |        |        |       |
| 135.000 |        |        | .1222  | .2476  | -.3028 | -.2204 | -.2397 |        |        |         |        |        |        |        |       |
| 150.000 | -.0752 | -.0106 | .1429  | .4077  | -.2835 | -.2270 | -.2262 |        |        |         |        |        |        |        |       |

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 AMES 11-073(0A148) - 140A/B/C/R ORB FUSELAGE

(XE8808)

| ALPHA ( 4 ) = 7.972 BETA ( 3 ) = .143  |        |                       |        |        |        |        |   |
|--|--------|-----------------------|--------|--------|--------|--------|---|
| SECTION ( 1 ) ORBITER FUSELAGE   |        | DEPENDENT VARIABLE CP |        |        |        |        |   |
| X/LB   |        | .6520                 | .7290  | .7790  | .8210  | .8790  | .9210 .9600 .9990 1.0180 1.0460                             |
| PHI  |        |                       |        |        |        |        |   |
| 165.000  | -.0620 | .1510                 |        |        |        |        |   |
| 180.000  | -.0506 | .0179                 | .1596  | .4449  |        |        |   |
|  |        |                       |        |        |        |        |   |
| ALPHA ( 4 ) = 7.971 BETA ( 4 ) = 4.201 MACH = .59612 Q = 593.49 P = 2385.7 RN/L = 4.8178 |        |                       |        |        |        |        |   |
| SECTION ( 1 ) ORBITER FUSELAGE   |        | DEPENDENT VARIABLE CP |        |        |        |        |   |
| X/LB   |        | .0000                 | .0080  | .0230  | .0460  | .0700  | .1120 .1580 .1680 .1770 .2040 .2510 .3010 .3780 .4970 .5740 |
| PHI  |        |                       |        |        |        |        |   |
| .000   | 1.0187 | .6711                 | .2531  | .1520  | .0708  |        |   |
| 20.000   |        |                       | .2431  | .1216  | .0354  | -.0123 | -.0135  |
| 40.000   |        |                       | .2491  | .0910  | .0205  | -.0135 | -.0561  |
| 55.000   |        |                       | .1975  | .0472  | -.0190 | -.0814 | -.1538  |
| 70.000   |        |                       | .1686  | .0229  | -.0530 | -.0672 | -.1653  |
| 90.000   |        |                       | .1646  | .0147  | -.0422 | -.0609 | -.1803  |
| 120.000  |        | .2047                 | .1498  | .0344  | -.0342 | .0146  | -.1119  |
| 140.000  |        |                       |        |        |        |        |   |
| 150.000  |        |                       | .1273  | .0665  | .0017  | .0529  | .2025   |
| 162.000  |        |                       |        |        |        |        |   |
| 165.000  |        |                       |        |        |        |        |   |
| 174.000  |        |                       |        |        |        |        |   |
| 180.000  | 1.0187 | .2531                 | .1288  | .0650  | .0299  | .0974  | .4623   |
|  |        |                       |        |        |        |        |   |
| X/LB   | .6520  | .7290                 | .7790  | .8210  | .8790  | .9210  | .9600 .9990 1.0180 1.0460                                   |
| PHI  |        |                       |        |        |        |        |   |
| .000   | .0884  | .0551                 | -.0011 | -.0784 | -.0622 | -.0540 | .0810   |
| 40.000   | .0979  |                       | .0097  | -.0632 | -.1118 | -.0479 | .0166   |
| 70.000   | -.3644 | -.3110                | -.1515 | -.0107 | .1255  | .1107  | -.1487  |
| 90.000   | -.2680 | -.2134                | -.0816 | -.0197 | -.2034 | -.1785 | -.2030  |
| 105.000  |        |                       | -.0274 | -.0027 | -.3137 | -.2339 | -.2532  |
| 110.000  |        |                       |        |        |        |        |   |
| 120.000  | -.1464 | -.1094                | .0021  | .0713  | -.3961 | -.3093 | -.2829  |
| 135.000  |        |                       | .1140  | .3247  | -.3980 | -.2812 | -.2824  |
| 150.000  | -.0616 | -.0094                | .1315  | .7994  | -.3564 | -.3098 | -.2778  |
| 165.000  | -.0628 |                       | .1295  |        | -.2648 | -.3350 | -.2780  |
| 180.000  | -.0743 | .0028                 | .1375  | .2630  |        |        |   |

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TABULATED PRESSURE DATA - OA148 ( AMES 11-073-1 )

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ALPHA ( 4 ) = 7.969 BETA ( 5 ) = 8.255 MACH = .59612 Q = 593.49 P = 2385.7 RN/L = 4.8178  
(XEBB06)

SECTION (1) ORBITER FUSELAGE

**DEPENDENT VARIABLE CP**

[illegible]

ALPHA ( 5 ) = 12.008    BETA ( 1 ) = -7.872    MACH = .47710    Q = 475.06    P = 1908.1    RW/L = 3.8563

SECTION ( 1 ) ORBITER FUSELAGE

SECTION ( ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|
| PHI     | .9238 | .7804 |       |       |       |       |       |       |       |        |        |        |        |        |       |
| .000    |       |       | .3912 | .2343 | .1670 |       |       | .0465 |       | .0409  | .0484  | .0672  | .0928  | .1413  | .1583 |
| 20.000  |       |       | .4587 | .2956 | .1835 | .0951 |       | .0729 |       | .0566  |        |        |        |        |       |
| 40.000  |       |       | .5947 | .3759 | .2750 | .1926 |       | .1304 |       | .0874  |        |        |        |        |       |
| 55.000  |       |       | .5764 | .3905 | .2908 | .1799 |       | .0743 |       |        | .1028  | .1339  | .1521  | .1677  | .2226 |
| 70.000  |       |       | .4917 | .3166 | .2172 | .1618 |       | .0432 |       | -.0106 |        |        |        |        |       |
| 90.000  |       | .5595 | .4078 | .2557 | .2007 | .1244 |       | .0190 |       | -.0786 | -.1768 | -.1231 | -.0972 | -.0909 |       |
| 120.000 |       |       | .2238 | .0961 | .0027 | .0475 |       | .0415 |       | -.1731 | -.2205 | -.1669 | -.1385 | -.1363 |       |
|         |       |       |       |       |       |       |       |       |       | -.3236 | -.4353 | -.5628 | -.4828 | -.5068 |       |





(XEB006)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 5 ) = 12.036 BETA ( 3 ) = .140

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

70.000 -.5172 -.3760 -.1869 .0189 -.0852 -.0620 -.1087  
 90.000 -.3740 -.2699 -.0861 .0528 -.1472 -.1214 -.1652  
 105.000 .0052 .0052 .0958 -.2283 -.1843 -.2225  
 110.000  
 120.000 -.2181 -.1072 .0634 .1760 -.3017 -.2427 -.2290  
 135.000 .0399 .3204 -.3260 -.2474 -.2551  
 150.000 -.1520 -.0785 .0984 .4893 -.3055 -.2409 -.2288  
 165.000 -.0957 .1310 .0933 -.1528 -.2534 -.2560  
 180.000 -.0800 -.0054 .1406 .4664

ALPHA ( 5 ) = 11.949 BETA ( 4 ) = 4.211 MACH = .47710 Q = 475.06 P = 1908.1 RV/L = 3.8563

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 .9443 .8030 .4037 .2629 .1766 .0649 .0592 .0536 .0589 .0737 .1099 .1558 .1591  
 20.000 .3697 .3135 .1652 .0824 .0143 .0346 .0134 .0134 .0945 .0302 .0286 .0815 .1672  
 40.000 .1874 .1273 .0430 .0765 .0793 .1906 .2510 .2510 .2717 .2344 .1902 .1914  
 55.000 .1102 .1102 .0209 .0593 .0769 .1750 .1777 .3571 .3193 .2258 .1705 .1645  
 70.000 .0661 .0661 .0365 .0957 .0248 .1128 .1128 .4818 .3868 .3406 .1686 .1368  
 120.000 .0137 -.0176 -.0763 .0061 .1673 .1673 .6150 .8155 .3931 .1670 -.0737 -.0850  
 150.000  
 151.000  
 162.000  
 165.000  
 169.000  
 174.000  
 180.000

X/LB

.9443 .0764 .0063 -.0190 -.0494 .0274 .4133 .2357 -1.7427 -.2978 -.1545 -.0809 -.0919

PHI

.000 .1591 .1159 .0624 -.0164 -.0193 -.0224 .0997 .4643 .1401  
 40.000 .1634 .0705 .0705 -.0082 -.0855 -.0212 .0351 .3099 .0396  
 70.000 .5100 -.4005 .2145 .0493 .1439 .1096 .1429  
 90.000 .3782 .2974 .1327 .0694 .2274 .1705 .1928  
 105.000 .0824 .0310 .3468 .2440 .2479  
 110.000  
 120.000  
 125.000  
 150.000

E

E

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TABULATED PRESSURE DATA - 0A148 (AVES 11-073-1)

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ALPHA (5) = 11.949 BETA (4) = 4.211

AVES 11-073(0A148) - 140A/B/C/R ORB FUSELAGE

(XEB808)

## SECTION (1) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|--------|--------|-------|-------|--------|--------|--------|-------|--------|--------|
| PHI     |        |        |       |       |        |        |        |       |        |        |
| 165.000 | -.0915 |        |       |       |        |        |        |       |        |        |
| 180.000 | -.1048 | -.0331 | .1032 | .4150 | -.2721 | -.3395 | -.2686 |       |        |        |

ALPHA (5) = 12.026 BETA (5) = 8.275 MACH = 4.7710 Q = 475.06 P = 1908.1 RV/L = 3.6563

## SECTION (1) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |         |        |        |        |        |       |
| 20.000  | .8841  | .7644  | .3813  | .2463  | .1437  |        |        | .0414  |        | .0412   | .0398  | .0659  | .1021  | .1461  | .1552 |
| 40.000  |        |        | .3008  | .1684  | .0777  | .0306  |        | -.0094 |        | -.0281  |        |        |        |        |       |
| 55.000  |        |        | .1687  | .0522  | -.0107 | -.0766 |        | -.1238 |        | -.1828  |        |        |        |        |       |
| 70.000  |        |        | .0316  | -.1059 | -.1649 | -.2302 |        | -.2736 |        | -.3165  |        |        |        |        |       |
| 90.000  |        | -.0627 | -.0006 | -.1202 | -.1736 | -.1473 |        | -.2302 |        | -.3146  |        |        |        |        |       |
| 120.000 |        |        | .0036  | -.1094 | -.1356 | -.1231 |        | -.2312 |        | -.3983  |        |        |        |        |       |
| 140.000 |        |        | -.0158 | -.1061 | -.1419 | -.0737 |        | -.1851 |        | -.5191  |        |        |        |        |       |
| 150.000 |        |        | -.0390 | -.0669 | -.1157 | -.0442 |        | .0649  |        | -.8220  |        |        |        |        |       |
| 162.000 |        |        |        |        |        |        |        |        |        |         |        |        |        |        |       |
| 165.000 |        |        |        |        |        |        |        |        |        |         |        |        |        |        |       |
| 169.000 |        |        |        |        |        |        |        |        |        |         |        |        |        |        |       |
| 174.000 |        |        |        |        |        |        |        |        |        |         |        |        |        |        |       |
| 180.000 |        |        |        |        |        |        |        |        |        |         |        |        |        |        |       |
| X/LB    | .8841  | .0101  | -.0206 | -.0482 | -.0938 | -.0085 | .3448  | .1843  |        | -1.3685 | -.3006 | -.1555 | -.0897 | -.1046 |       |
|         | .6520  | .7230  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460  |        |        |        |        |       |
| PHI     |        |        |        |        |        |        |        |        |        |         |        |        |        |        |       |
| 40.000  | .1504  | .1103  | .0566  | -.0225 | -.0223 | -.0213 | .0937  |        |        |         |        |        |        |        |       |
| 70.000  | -.1459 |        | .0631  | -.0099 | -.0908 | -.0261 | .0252  |        |        |         |        |        |        |        |       |
| 90.000  | -.5012 | -.4191 | -.2588 | -.1351 | -.1996 | -.1518 | -.1628 |        |        |         |        |        |        |        |       |
| 105.000 | -.3683 | -.3370 | -.2280 | -.1492 | -.2806 | -.2003 | -.1934 |        |        |         |        |        |        |        |       |
| 110.000 |        |        | -.1633 | -.1401 | -.4599 | -.3059 | -.2864 |        |        |         |        |        |        |        |       |
| 120.000 | -.2309 | -.2391 | -.1251 | .0562  | -.5412 | -.4015 | -.3487 |        |        |         |        |        |        |        |       |
| 135.000 |        |        | .0435  | .4944  | -.5307 | -.3736 | -.3367 |        |        |         |        |        |        |        |       |
| 150.000 | -.1080 | -.0703 | .0483  | .4168  | -.4362 | -.3494 | -.3494 |        |        |         |        |        |        |        |       |
| 165.000 | -.1421 |        | .0176  |        | -.4944 | -.4497 | -.3112 |        |        |         |        |        |        |        |       |
| 180.000 | -.1880 | -.1265 | .0132  |        |        |        |        |        |        |         |        |        |        |        |       |

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ORIGINAL PAGE IS POOR

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TABULATED PRESSURE DATA - 0A148 ( AVES 11-073-1 )

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AVES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB8077) ( 06 AUG 75 )

## REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO  
 LREF = 474.8000 IN. YMRP = .0000 IN. YO  
 BREF = 936.0680 IN. ZMRP = 375.0000 IN. ZO  
 SCALE = .0300

ALPHA ( 1 ) = -4.068 BETA ( 1 ) = -3.876 MACH = .89933 Q = 599.81 P = 1059.5 RN/L = 3.5834

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | PHI     | 0.000  | 0.000  | 0.080  | 0.230  | 0.460   | 0.700   | 1.120   | 1.580   | 1.660   | 1.770   | 2.040   | 2.510  | 3.010  | 3.780  | 4.870  | 5.740  |
|---------|---------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|--------|--------|--------|--------|--------|
| PHI     | 0.000   | 1.1939 | .3471  | -.0840 | -.1186 | -.1360  | -.2392  | -.2549  | -.2722  | -.2893  | -.2473  | -.2196  | -.1816 | -.0757 | -.0371 | .0007  | -.0172 |
| 20.000  | 40.000  | -.0925 | .1423  | -.1179 | -.0855 | -.0677  | -.1059  | -.2060  | -.3644  | -.4435  | -.3789  | -.2895  | -.1288 | -.0884 | -.0425 | -.0461 |        |
| 55.000  | 70.000  | .3311  | .4585  | .2170  | .1205  | .0580   | .1071   | -.0725  | -.1038  | -.2347  | -.3038  | -.4639  | -.5835 | -.0181 | .0568  | .1084  |        |
| 90.000  | 120.000 | .5483  | .6382  | .3060  | .4530  | .3274   | .3223   | .1805   | -.0725  | -.1626  | -.2356  | -.5835  | -.1243 | .0423  | .0912  | .0524  |        |
| 140.000 | 150.000 | .6418  | .5023  | .3993  | .4152  | .3993   | .4152   | .6561   | .7178   | .3278   | -.2811  | -.8616  | -.0715 | .0521  | .0490  |        |        |
| 151.000 | 162.000 |        |        |        |        |         |         |         |         | .3872   |         |         |        |        |        |        |        |
| 165.000 | 174.000 | 1.1939 | .8446  | .5828  | .4647  | .3857   | .4138   | .8283   | .6405   | -.8379  | -.7723  | -.0223  | .0135  | .0421  |        |        |        |
| 180.000 |         | .6520  | .7290  | .7790  | .8210  | .8790   | .9210   | .9600   | .9990   | 1.0180  | 1.0460  |         |        |        |        |        |        |
| X/LB    | PHI     | 0.000  | 40.000 | 70.000 | 90.000 | 105.000 | 110.000 | 120.000 | 135.000 | 150.000 | 165.000 | 180.000 |        |        |        |        |        |
|         |         | -.1377 | -.1949 | -.2445 | -.3477 | -.3444  | -.2566  | -.1051  | .0311   | .3889   | .2273   |         |        |        |        |        |        |
|         |         | -.2438 | -.0370 | -.0689 | .1698  | .0431   | -.0088  | -.0694  | -.0694  | .2203   | .1282   |         |        |        |        |        |        |
|         |         | .0286  | .0156  | .1296  | .2025  | .1046   | -.0712  | -.1206  | -.1206  |         |         |         |        |        |        |        |        |
|         |         | .0547  | .1932  | .1932  | .2515  | -.2137  | -.1252  | -.1584  | -.3860  |         |         |         |        |        |        |        |        |
|         |         | .0663  | .0950  | .2917  | .3488  | -.2782  | -.1869  | -.1947  | -.2857  |         |         |         |        |        |        |        |        |
|         |         | .0725  | .1411  | .3605  | .4380  | -.1815  | -.1013  | -.1436  |         |         |         |         |        |        |        |        |        |
|         |         | .0704  | .3287  | .3287  | .4346  | -.0910  | -.0617  | -.1563  |         |         |         |         |        |        |        |        |        |
|         |         | .0596  | .1324  | .3059  | .5175  | .1165   | -.0387  | -.3369  |         |         |         |         |        |        |        |        |        |

## PARAMETRIC DATA

RUDDER = .000 SPDRK = 55.000  
 BOFLAP = 22.500 L-ELVN = .000  
 R-ELVN = .000 MACH = .900

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TABULATED PRESSURE DATA - 0A148 ( ARES 11-073-1 )

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(XEB007)

ARES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 1 ) = -4.048 BETA ( 2 ) = .153 MACH = .89333 Q = 599.81 P = 1059.5 RV/L = 3.5834

## SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000   | 1.2021 | .3546 | -.0739 | -.1008 | -.1569 |        | -.2172 | -.2322 | -.1983 | -.0713 | -.0290 | .0078  | -.0092 |       |
| 20.000  |        | -.0514 |       | -.1289 | -.2226 | -.2317 |        | -.2462 | -.2551 |        |        |        |        |        |       |
| 40.000  |        | .0948  |       | -.1158 | -.2083 | -.2189 |        | -.3134 | -.3727 | -.3543 | -.0793 | -.0413 | -.0105 | -.0137 |       |
| 55.000  |        |        |       | .2405  | .0132  | -.0706 | -.1357 | -.2428 | -.3428 |        |        |        |        |        |       |
| 70.000  |        |        |       | .3426  | .1038  | .0191  | -.0238 | -.1844 | -.3251 | -.7659 | -.0494 | .0456  | .0855  |        |       |
| 90.000  |        | .5846  |       | .4241  | .1802  | .0984  | .0064  | -.1765 | -.4515 | -.7332 | -.0995 | .0342  | .0701  |        |       |
| 120.000 |        |        |       | .5336  | .3454  | .2231  | .2290  | .0580  | -.4295 | -.6789 | -.1743 | .0104  | .0436  |        |       |
| 140.000 |        |        |       |        |        |        |        |        | -.4548 | -.6378 | -.0399 | .0204  | .0436  |        |       |
| 150.000 |        |        |       | .5887  | .4624  | .3556  | .3692  | .5810  | .2281  |        |        |        |        |        |       |
| 151.000 |        |        |       |        |        |        |        |        | .3084  |        |        |        |        |        |       |
| 162.000 |        |        |       |        |        |        |        |        |        | -.8447 | -.7432 | -.0178 | .0221  | .0448  |       |
| 165.000 |        |        |       |        |        |        |        | .6875  |        |        |        |        |        |        |       |
| 169.000 |        |        |       |        |        |        | .8156  | .6778  |        | -.9520 | -.7385 | -.0095 | .0223  | .0464  |       |
| 174.000 |        |        |       |        |        |        |        |        |        |        |        |        |        |        |       |
| 180.000 | 1.2021 | .8394  | .5981 | .4750  | .3963  | .4196  |        |        |        |        |        |        |        |        |       |
| X/LB    | .6520  | .7290  | .7790 | .8210  | .8730  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |

PHI

| X/LB    | .0000 | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|
| PHI     | .000  | 1.1253 | -.2021 | -.2405 | -.3454 | -.3774 | -.0988 | .0989  | .4234  | .2389 |       |       |       |       |       |
| 20.000  |       | -.1929 |        | -.2324 | -.3411 | -.3157 | -.1368 | .0295  | .2630  | .1234 |       |       |       |       |       |
| 40.000  |       | .0173  | -.0479 | .0301  | .1045  | -.1495 | -.0773 | -.1148 |        |       |       |       |       |       |       |
| 50.000  |       | .0436  | .0076  | .0922  | .1255  | -.2373 | -.1455 | -.1602 |        |       |       |       |       |       |       |
| 105.000 |       |        |        | .1505  | .1371  | -.3781 | -.1945 | -.2039 |        |       |       |       |       |       |       |
| 110.000 |       |        |        |        |        |        |        |        | -.3933 |       |       |       |       |       |       |
| 120.000 | .0588 | .0727  | .2238  | .2310  | .4944  | -.3198 | -.2827 | -.3061 |        |       |       |       |       |       |       |
| 130.000 |       |        | .3121  | .4527  | -.3342 | -.2083 | -.2074 |        |        |       |       |       |       |       |       |
| 150.000 | .0787 | .1348  | .3258  | .5136  | -.2067 | -.1873 | -.2096 |        |        |       |       |       |       |       |       |
| 165.000 | .0780 |        | .3221  |        | -.0133 | -.1645 | -.3396 |        |        |       |       |       |       |       |       |
| 180.000 | .0755 | .1423  | .3242  | .5666  |        |        |        |        |        |       |       |       |       |       |       |

ALPHA ( 1 ) = -4.057 BETA ( 2 ) = .4237 MACH = .89333 Q = 599.81 P = 1059.5 RV/L = 3.5834

## SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230 | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | 1.1821 | .3351 | -.0920 | -.1036 | -.1658 |        | -.2172 | -.2530 | -.2063 | -.0813 | -.0351 | .0034  | -.0259 |       |
| 20.000  |       | -.0877 |       | -.1366 | -.2291 | -.2284 |        | -.2307 | -.2736 |        |        |        |        |        |       |
| 40.000  |       | .0305  |       | -.1432 | -.2163 | -.2041 |        | -.2783 | -.3411 | -.3335 | -.0541 | -.0182 | -.0006 | .0026  |       |
| 55.000  |       |        |       | .1407  | .0636  | -.1341 | -.1696 | -.2735 | -.3965 |        |        |        |        |        |       |
| 70.000  |       |        |       | .2232  | -.0053 | -.0729 | -.0958 | -.2455 | -.4094 | -.8574 | -.1140 | .0448  | .0714  |        |       |
| 90.000  | .4202 | .3006  | .0526 | -.0053 | -.0895 | -.0895 | -.2628 | -.5933 | -.5933 | -.7412 | -.2514 | .0429  | .0500  |        |       |
| 120.000 |       | .4180  | .2260 | .1021  | .1144  |        | -.0694 | -.5966 | -.5966 | -.8212 | -.2846 | -.0165 | -.0209 |        |       |



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(XEB807)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = .010 BETA ( 1 ) = -3.903

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770   | .2040  | .2510  | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|-------|-------|-------|-------|
| PHI     |        |        |        |        |        |        |        |        |         |        |        |       |       |       |       |
| 180.000 | 1.2107 | .7173  | .4594  | .3610  | .2873  | .3309  |        | .5894  | -1.0487 | -.8738 | -.0695 | .0163 | .0098 |       |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180  | 1.0460 |        |       |       |       |       |
| PHI     |        |        |        |        |        |        |        |        |         |        |        |       |       |       |       |
| 40.000  | -.0278 | -.0787 | -.1479 | -.2727 | -.2892 | -.1073 | .1044  |        | .3746   | .2205  |        |       |       |       |       |
| 70.000  | -.0856 | -.1301 | -.2591 | -.2591 | -.3177 | -.1260 | -.0014 |        | .2918   | .1484  |        |       |       |       |       |
| 90.000  | -.1027 | -.2137 | .0015  | .1473  | -.0535 | -.0059 | -.0621 |        |         |        |        |       |       |       |       |
| 105.000 | -.0581 | -.1242 | .0658  | .1812  | -.1080 | -.0650 | -.1138 |        |         |        |        |       |       |       |       |
| 110.000 |        |        | .1406  | .2281  | -.2186 | -.1186 | -.1558 |        |         |        |        |       |       |       |       |
| 120.000 | -.0591 | -.0184 | .2487  | .2911  | -.3167 | -.1805 | -.1729 | -.3877 |         |        |        |       |       |       |       |
| 135.000 |        |        | .5161  | .3551  | -.2525 | -.1281 | -.1589 | -.2841 |         |        |        |       |       |       |       |
| 150.000 | -.0023 | .0747  | .3057  | .2983  | -.1771 | -.0998 | -.1753 |        |         |        |        |       |       |       |       |
| 165.000 | .0008  | .2782  | .2782  | .0562  | -.0959 | -.3397 |        |        |         |        |        |       |       |       |       |
| 180.000 | -.0077 | .0689  | .2540  | .4004  |        |        |        |        |         |        |        |       |       |       |       |

ALPHA ( 2 ) = .014 BETA ( 2 ) = .148 MACH = .90060 Q = 601.03 P = 1058.5 RV/L = 3.5880

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|--------|--------|--------|--------|-------|--------|--------|--------|-------|-------|-------|-------|-------|
| PHI     |        |        |        |        |        |        |       |        |        |        |       |       |       |       |       |
| 20.000  | 1.2164 | .5238  | .0752  | .0060  | -.0621 | -.1456 |       | -.1546 |        |        |       |       |       |       |       |
| 40.000  |        |        | .0969  | -.0100 | -.1095 | -.1092 |       | -.1719 |        |        |       |       |       |       |       |
| 55.000  |        |        | .2343  | .0135  | -.0733 | -.1092 |       | -.2201 |        |        |       |       |       |       |       |
| 70.000  |        |        | .3304  | .1164  | .0289  | -.0340 |       | -.1435 |        |        |       |       |       |       |       |
| 90.000  |        |        | .3814  | .1607  | .0678  | .0273  |       | -.1168 |        |        |       |       |       |       |       |
| 120.000 |        | .5739  | .4303  | .2029  | .0851  | .0555  |       | -.1052 |        |        |       |       |       |       |       |
| 140.000 |        |        | .4830  | .3084  | .1922  | .2237  |       | .0926  |        |        |       |       |       |       |       |
| 150.000 |        |        | .4919  | .3707  | .2726  | .3122  |       | .5547  |        |        |       |       |       |       |       |
| 162.000 |        |        |        |        |        |        |       |        | .2071  |        |       |       |       |       |       |
| 165.000 |        |        |        |        |        |        |       |        | .2751  |        |       |       |       |       |       |
| 174.000 |        |        |        |        |        |        |       |        |        |        |       |       |       |       |       |
| 180.000 |        |        |        |        |        |        |       |        |        |        |       |       |       |       |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600 | .9990  | 1.0180 | 1.0460 |       |       |       |       |       |
| PHI     |        |        |        |        |        |        |       |        |        |        |       |       |       |       |       |
| 40.000  | -.0247 | -.0801 | -.1476 | -.2612 | -.2805 | -.1049 | .1077 |        | .4199  | .2321  |       |       |       |       |       |
| 40.000  | -.0614 | -.1346 | -.2488 | -.2726 | -.1213 | .0358  |       |        | .2837  | .1568  |       |       |       |       |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8607)

ALPHA ( 2 ) = .014 BETA ( 2 ) = .148

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |       |        |        |        |        |        |        |
| 70.000  | -.1147 | -.2034 | -.0413 | .0838 | -.1590 | -.0656 | -.0972 |        |        |        |
| 90.000  | -.0645 | -.1331 | .0360  | .1000 | -.2403 | -.1256 | -.1495 |        |        |        |
| 105.000 |        |        | .1036  | .1318 | -.3837 | -.1771 | -.1691 |        |        |        |
| 110.000 |        |        |        |       |        |        |        | -.3648 |        |        |
| 120.000 | -.0199 | -.0059 | .1810  | .2411 | -.4777 | -.2724 | -.2452 | -.2794 |        |        |
| 135.000 |        |        | .2508  | .4025 | -.3642 | -.2127 | -.2060 |        |        |        |
| 150.000 | .0110  | .0614  | .2691  | .4526 | -.2798 | -.2183 | -.2215 |        |        |        |
| 165.000 | .0117  |        | .2675  |       | -.0755 | -.2124 | -.3254 |        |        |        |
| 180.000 | .0124  | .0792  | .2669  | .4972 |        |        |        |        |        |        |

ALPHA ( 2 ) = .013 BETA ( 3 ) = .4211 MACH = .90060 Q = 601.03 P = 1059.5 RN/L = 3.5880

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460  | .0700  | .1120  | .1580 | .1660   | .1770    | .2040  | .2510  | .3010  | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|--------|--------|--------|-------|---------|----------|--------|--------|--------|-------|-------|-------|
| PHI     |        |       |       |        |        |        |       |         |          |        |        |        |       |       |       |
| .000    | 1.2005 | .5043 | .0593 | -.0026 | -.0795 |        |       | -.1592  | -.1825   | -.1906 | -.0851 | -.0181 | .0257 | .0211 |       |
| 20.000  |        |       | .0615 | -.0294 | -.1257 | -.1506 |       | -.1730  | -.1923   | -.2121 | -.0570 | .0016  | .0182 | .0259 |       |
| 40.000  |        |       | .1534 | -.0192 | -.1056 | -.1161 |       | -.1794  | -.2121   | -.2809 | -.0570 | .0016  | .0182 | .0259 |       |
| 55.000  |        |       | .2193 | .0268  | -.0465 | -.0798 |       | -.1833  | -.2790   | -.7852 | -.1042 | .0096  | .0381 | .0340 |       |
| 70.000  |        |       | .2608 | .0463  | -.0306 | -.0410 |       | -.1811  | -.3319   | -.7852 | -.1042 | .0096  | .0381 | .0340 |       |
| 90.000  | .4088  |       | .3095 | .0833  | -.0192 | -.0298 |       | -.1905  | -.4911   | -.7852 | -.1042 | .0096  | .0381 | .0340 |       |
| 120.000 |        |       | .3792 | .2022  | .0852  | .1290  |       | -.18232 | -.5623   | -.7852 | -.1042 | .0096  | .0381 | .0340 |       |
| 140.000 |        |       |       |        |        |        |       | -.7537  | -.9210   | -.9707 | -.1301 | .0167  | .0052 |       |       |
| 150.000 |        |       | .4279 | .3225  | .2197  | .2567  |       | .4579   | .0970    |        |        |        |       |       |       |
| 151.000 |        |       |       |        |        |        |       | .1830   |          |        |        |        |       |       |       |
| 162.000 |        |       |       |        |        |        |       |         | -.8747   | -.8644 | -.0743 | .0139  | .0069 |       |       |
| 163.000 |        |       |       |        |        |        |       | .5970   |          |        |        |        |       |       |       |
| 174.000 |        |       |       |        |        | .7148  |       | .6154   |          |        |        |        |       |       |       |
| 180.000 | 1.2005 | .6833 | .4728 | .3576  | .2864  | .3380  |       |         | -.1.0592 | -.8810 | -.0727 | .0144  | .0038 |       |       |

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

| X/LB    | .0310  | -.0786 | -.1485 | -.2636 | -.2741 | -.1077 | .1123  | .3815 | .2212 | .0962 |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|
| 70.000  | -.0422 | -.1966 | -.1360 | -.2483 | -.2972 | -.1521 | .0450  | .3815 | .2212 | .0962 |
| 90.000  | -.0656 | -.1145 | .0013  | .0381  | -.3892 | -.2441 | -.1885 | .2865 | .0962 |       |
| 105.000 |        |        | .0655  | .0420  | -.5160 | -.3038 | -.2146 |       |       |       |
| 110.000 |        |        |        |        |        |        |        |       |       |       |
| 120.000 | -.0229 | -.0215 | .1201  | .0948  | -.6366 | -.5982 | -.2841 |       |       |       |
| 135.000 |        |        | .2201  | .3343  | -.5232 | -.5042 | -.1939 |       |       |       |
| 150.000 | .0048  | .0602  | .2425  | .4190  | -.3901 | -.4591 | -.2884 |       |       |       |

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TABULATED PRESSURE DATA - OA148 ( AMES 11-073-1 )

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AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

(XE8807)

ALPHA ( 2 ) = .013 BETA ( 3 ) = 4.211

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9500 .9990 1.0180 1.0460

PHI

.55.000 .0010 .2481  
110.000 -.0030 .0743 .2643 .4296 -.1765 -.3999 -.3356

ALPHA ( 3 ) = 3.998 BETA ( 1 ) = -3.905 MACH = .90070 Q = 600.82 P = 1058.0 RN/L = 3.5882

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .3010 .3780 .4970 .5740

PHI

.000 1.2021 .6714 .2181 .1043 .0262 .0677  
.20.000 .2625 .1159 .0001  
40.000 .4187 .1738 .0671 -.0010  
55.000 .5036 .2825 .1785 .0973 .0108  
70.000 .5227 .3022 .1894 .1397 .0006  
90.000 .5284 .3145 .1982 .1650 .0226  
120.000 .4967 .3280 .2232 .2660 .2090  
140.000 .4154 .2917 .2098 .2750 .6099  
150.000  
151.000  
162.000  
165.000  
169.000  
174.000  
180.000.2776  
.3081

.6386

.7467

.5434

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9500 .9990 1.0180 1.0460

PHI

.000 .0547 .0082 -.0778 -.1918 -.2095 -.1264 .1171  
40.000 .0343 -.0560 -.1790 -.2171 -.1461 -.0002  
70.000 -.2148 -.4254 -.0726 .1370 .0500 .0214 -.0282  
90.000 -.1669 -.3527 .0198 .1526 .0833 .0478 .1013  
105.000 .1027 .1752 .1689 .0962 .1359  
110.000  
120.000  
135.000  
150.000  
165.000  
180.000-.3473  
-.2571

.1593

.2648

.1672

.0300

.1147

.3125

.3458

.3458

.3458

.3458

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.3458

.3458

DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB807)

ALPHA ( 3 ) = 4.002 BETA ( 2 ) = .135 MACH = .90070 Q = 600.82 P = 1058.0 RN/L = 3.5882

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | 0.000 | .0080  | .0230 | .0460 | .0700  | .1120  | .1580  | .1660  | .1770    | .2040    | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|--------|-------|-------|--------|--------|--------|--------|----------|----------|--------|--------|--------|--------|-------|
| PHI     | .000  | .6728  | .2210 | .1137 | .0358  | -.0645 | -.0877 | -.0877 | -.0971   | -.1276   | -.0555 | .0149  | .0699  | .0838  |       |
| 20.000  | .000  | .2411  | .1028 | .0080 | -.0080 | -.0123 | -.0946 | -.0946 | -.1147   | -.1844   | -.0402 | .0263  | .0590  | .1174  |       |
| 40.000  | .000  | .3437  | .1316 | .0377 | .0377  | -.0123 | -.0915 | -.0915 | -.1338   | -.1562   | -.0402 | .0263  | .0590  | .1174  |       |
| 55.000  | .000  | .3915  | .1817 | .0926 | .0926  | .0540  | -.0728 | -.0728 | -.1562   | -.1963   | -.1496 | -.0267 | .0131  | .0131  |       |
| 70.000  | .000  | .3985  | .1824 | .0881 | .0881  | .0765  | -.0590 | -.0590 | -.2959   | -.7208   | -.1958 | -.0239 | .0063  | .0063  |       |
| 90.000  | .000  | .4133  | .1979 | .0961 | .0961  | .0765  | -.1198 | -.1198 | -.3791   | -.6960   | -.2858 | -.0161 | -.0133 | -.0133 |       |
| 120.000 | .000  | .4169  | .2487 | .1489 | .1489  | .1910  | .5322  | .5322  | -.5026   | -.1.0262 | -.3840 | .0490  | .0099  | .0099  |       |
| 140.000 | .000  | .3827  | .2749 | .1827 | .1827  | .2468  | .1855  | .1855  | -.8743   | -.1.0262 | -.3840 | .0490  | .0099  | .0099  |       |
| 150.000 | .000  |        |       |       |        |        | .2389  | .2389  | -.9687   | -.9358   | -.2244 | .0438  | .0129  | .0129  |       |
| 162.000 | .000  |        |       |       |        |        | .6071  | .6071  | -.1.0147 | -.9426   | -.1652 | .0400  | .0080  | .0080  |       |
| 165.000 | .000  |        |       |       |        |        | .7232  | .7232  | -.1.0147 | -.9426   | -.1652 | .0400  | .0080  | .0080  |       |
| 169.000 | .000  |        |       |       |        |        | .9600  | .9600  | -.1.0180 | 1.0460   |        |        |        |        |       |
| 174.000 | .000  |        |       |       |        |        |        |        |          |          |        |        |        |        |       |
| 180.000 | .000  | 1.2079 | .5652 | .3525 | .2694  | .2043  | .2727  | .5829  | -.1.0147 | -.9426   | -.1652 | .0400  | .0080  | .0080  |       |
| X/LB    | .6520 | .7290  | .7790 | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180   | 1.0460   |        |        |        |        |       |

## PHI

|         |        |        |        |        |        |        |        |       |       |  |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--|--|--|--|--|--|
| 0.000   | .0628  | .0108  | -.0679 | -.2000 | -.2050 | -.1228 | .1102  | .4570 | .2395 |  |  |  |  |  |  |
| 40.000  | .0538  | -.0526 | -.1811 | -.2143 | -.2143 | -.1443 | .0201  | .3358 | .1262 |  |  |  |  |  |  |
| 70.000  | -.2287 | -.4389 | -.1041 | .0585  | -.1315 | -.0598 | -.0909 |       |       |  |  |  |  |  |  |
| 90.000  | -.1684 | -.3344 | .0266  | .0628  | -.2093 | -.1099 | -.1364 |       |       |  |  |  |  |  |  |
| 105.000 |        | .0595  | .0712  | -.3485 | -.1716 | -.1839 | -.1839 |       |       |  |  |  |  |  |  |
| 110.000 |        |        |        |        |        |        | -.3737 |       |       |  |  |  |  |  |  |
| 120.000 | -.1252 | -.1262 | .1159  | .1810  | .4840  | -.2580 | -.2196 |       |       |  |  |  |  |  |  |
| 135.000 |        | .1820  | .3924  | .4005  | -.2240 | -.2211 | -.2211 |       |       |  |  |  |  |  |  |
| 150.000 | -.0523 | -.0209 | .1902  | .4746  | -.2881 | -.2325 | -.2308 |       |       |  |  |  |  |  |  |
| 165.000 | -.0502 | .1935  | .1935  | -.1256 | -.2371 | -.3146 |        |       |       |  |  |  |  |  |  |
| 180.000 | -.0562 | .0001  | .1967  | .4484  |        |        |        |       |       |  |  |  |  |  |  |

ALPHA ( 3 ) = 3.920 BETA ( 3 ) = 4.206 MACH = .90070 Q = 600.82 P = 1058.0 RN/L = 3.5882

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | 0.000 | .0080 | .0230 | .0460 | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | .6545 | .2081 | .1043 | .0130  | -.0693 | -.1003 | -.1003 | -.1183 | -.1355 | -.0725 | .0077  | .0623  | .0734  |       |
| 20.000  | .000  | .2024 | .0778 | .0298 | -.0298 | -.0693 | -.1084 | -.1084 | -.1317 | -.2156 | -.1041 | .0084  | .0429  | .1078  |       |
| 40.000  | .000  | .2521 | .0804 | .0065 | -.0065 | -.0443 | -.1018 | -.1018 | -.1520 | -.2156 | -.1041 | .0084  | .0429  | .1078  |       |
| 55.000  | .000  | .2703 | .0807 | .0082 | .0082  | .0282  | -.1248 | -.1248 | -.2058 | -.2156 | -.1041 | .0084  | .0429  | .1078  |       |
| 70.000  | .000  | .2739 | .0738 | .0077 | .0077  | .0107  | -.1345 | -.1345 | -.2622 | -.7260 | -.1478 | -.0326 | -.0001 | -.0001 |       |
| 90.000  | .000  | .2965 | .0895 | .0018 | -.0018 | .0014  | -.1338 | -.1338 | -.4051 | -.7970 | -.1862 | -.0122 | .0105  | .0105  |       |
| 120.000 | .000  | .3229 | .1615 | .0614 | .0614  | .1272  | .0154  | .0154  | -.5209 | -.7602 | -.2891 | .0172  | .0041  | .0041  |       |

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
AMES 11-073(0A148) - 140A/B/C/R ORB FUSELAGE

$$\text{PHI} (3) = 3.920 \quad \text{BETA} (3) = 4.206$$

## SECTION 11 ORBITER FUSELAGE

DEPENDENT VARIABLE CP

DEPENDENT VARIABLE CP

| SECTION ( ) ORBITER FUSELAGE | DEPENDENT VARIABLE | CP    |
|------------------------------|--------------------|-------|
|                              | 20.10              | 4.970 |
|                              | 25.10              | 5.740 |

### III

[illegible]

87

[illegible]

|                                |         |       |              |        |      |   |        |
|--------------------------------|---------|-------|--------------|--------|------|---|--------|
| 180.000                        | - .0597 | .0150 | .3576        |        |      |   |        |
| $\rho_{\text{H}_2\text{O}}(M)$ | =       | 7.946 | $\beta(T) =$ | -3.900 | MACH | = | .89867 |
|                                |         |       |              |        | P    | = | 599.20 |
|                                |         |       |              |        | RN/L | = | 1059.9 |
|                                |         |       |              |        |      |   | 3.5837 |

## SECTION ( ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| SECTION ( 1 ) ORBITER FUSELAGE | DEPENDENT VARIABLE CP |        |        |        |
|--------------------------------|-----------------------|--------|--------|--------|
|                                | 1.550                 | 1.770  | 2.040  | 2.310  |
|                                | 0.5740                | 0.3780 | 0.1970 | 0.0740 |

875

[illegible]

7048

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8807)

ALPHA ( 4 ) = 7.946 BETA ( 1 ) = -3.900

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 180.000 | 1.1655 | .4203  | .2133  | .1701  | .1012  | .2015  |        | .4985  |        | -.9215 | -.6851 | -.4850 | -.1247 | -.0010 |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| .000    | .1340  | .0829  | .0005  | -.1210 | -.1681 | -.1408 | .1047  |        | .5123  | .2595  |        |        |        |        |       |
| 40.000  | .1394  |        | .0252  | -.0987 | -.1905 | -.1621 | -.3049 |        | .4057  | .1616  |        |        |        |        |       |
| 70.000  | -.3100 | -.5746 | -.1226 | .0960  | -.0767 | -.0462 | -.0747 |        |        |        |        |        |        |        |       |
| 90.000  | -.2559 | -.4906 | -.0388 | .0792  | -.1023 | -.1013 | -.1367 |        |        |        |        |        |        |        |       |
| 105.000 |        |        | .0667  | .0779  | -.1963 | -.1653 | -.1848 |        |        |        |        |        |        |        |       |
| 110.000 |        |        |        |        |        |        | -.3634 |        |        |        |        |        |        |        |       |
| 120.000 | -.3061 | -.2518 | .0835  | .0888  | -.2991 | -.2118 | -.1818 | -.2680 |        |        |        |        |        |        |       |
| 135.000 |        |        | .1029  | .1325  | -.3291 | -.1952 | -.2134 |        |        |        |        |        |        |        |       |
| 150.000 | -.1618 | -.1050 | .0911  | .2557  | -.2587 | -.1767 | -.2190 |        |        |        |        |        |        |        |       |
| 165.000 | -.1337 |        | .0897  |        | -.0417 | -.1417 | -.3115 |        |        |        |        |        |        |        |       |
| 180.000 | -.1159 | -.0721 | .0976  | .3295  |        |        |        |        |        |        |        |        |        |        |       |

ALPHA ( 4 ) = 7.956 BETA ( 2 ) = .143 MACH = .89867 Q = 599.20 P = 1059.9 RN/L = 3.5837

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460  | .0700  | .1120  | .1580  | .1660  | .1770   | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|--------|--------|--------|--------|--------|---------|---------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |        |        |        |        |        |         |         |        |        |        |        |       |
| 20.000  | 1.1725 | .8168 | .3634 | .2302  | .1329  | .0275  | -.0105 | -.0197 | -.0334  | -.0444  | -.0583 | -.0176 | .0432  | .1249  | .1923 |
| 40.000  |        |       | .3967 | .2223  | .1003  | .0672  | -.0031 | -.0034 | -.0573  | -.0473  | -.1134 | -.0428 | .0470  | .1022  | .1773 |
| 55.000  |        |       | .4440 | .2423  | .1378  | .0587  | -.0344 | -.0344 | -.1081  | -.1565  | -.5971 | -.2206 | -.0925 | -.0206 |       |
| 70.000  |        |       | .4303 | .2280  | .1305  | .0706  | -.0394 | -.0245 | -.2504  | -.6930  | -.6930 | -.2449 | -.0885 | -.0225 |       |
| 90.000  | .4880  |       | .3956 | .1930  | .0934  | .0706  | -.0245 | .1364  | -.3633  | -.7129  | -.3275 | -.1192 | -.0524 |        |       |
| 120.000 |        |       | .3812 | .1850  | .0905  | .0848  |        |        | -.5073  | -.8470  | -.6460 | -.4675 | -.0287 | -.0131 |       |
| 140.000 |        |       | .3357 | .1814  | .0926  | .1651  |        |        | .1744   |         |        |        |        |        |       |
| 150.000 |        |       | .2699 | .1835  | .1003  | .1924  | .5060  |        | .2057   |         |        |        |        |        |       |
| 151.000 |        |       |       |        |        |        |        |        |         | -.10420 | -.6796 | -.4508 | .0187  | .0076  |       |
| 162.000 |        |       |       |        |        |        |        |        |         |         |        |        |        |        |       |
| 165.000 |        |       |       |        |        |        |        |        |         |         |        |        |        |        |       |
| 169.000 |        |       |       |        |        |        |        |        |         |         |        |        |        |        |       |
| 174.000 |        |       |       |        |        |        |        |        |         |         |        |        |        |        |       |
| 180.000 | 1.1725 | .4119 | .2325 | .1707  | .1141  | .2107  | .6732  | .5352  | -.11432 | -.6652  | -.3637 | .0225  | .0071  |        |       |
| X/LB    | .6520  | .7290 | .7790 | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180  | 1.0460  |        |        |        |        |       |
| PHI     |        |       |       |        |        |        |        |        |         |         |        |        |        |        |       |
| .000    | .1390  | .0891 | .0100 | -.1160 | -.1720 | -.1371 | .1055  |        | .5106   | .2541   |        |        |        |        |       |
| 40.000  | .1426  |       | .0252 | -.0957 | -.1952 | -.1478 | .0211  |        | .3708   | .1305   |        |        |        |        |       |

(XEB807)

DATE 10 FEB 76 TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 7.955 BETA ( 2 ) = .143

| SECTION ( 1 ) ORBITER FUSELAGE |        | DEPENDENT VARIABLE CP |        |        |        |                                       |
|--------------------------------|--------|-----------------------|--------|--------|--------|---------------------------------------|
| X/LB                           |        | .6520                 | .7290  | .7790  | .8210  | .8790 .9210 .9600 .9990 1.0180 1.0460 |
| PHI                            |        |                       |        |        |        |                                       |
| 70.000                         | -.3173 | -.6267                | -.1832 | .0217  | -.1680 | -.1113 -.1240                         |
| 90.000                         | -.2562 | -.4741                | -.1058 | .0250  | -.2542 | -.1617 -.1598                         |
| 105.000                        |        |                       | .0112  | .0188  | -.3575 | -.2089 -.2068                         |
| 110.000                        |        |                       |        |        |        | -.3684                                |
| 120.000                        | -.2086 | -.2439                | .0180  | .0886  | -.4759 | -.2686 -.2347                         |
| 135.000                        |        |                       | .0884  | .3011  | -.4257 | -.2662 -.2478                         |
| 150.000                        | -.1283 | -.1148                | .1062  | .3978  | -.3350 | -.2801 -.2490                         |
| 165.000                        | -.1150 | .1171                 |        | -.1480 | -.2644 | -.3027                                |
| 180.000                        | -.1129 | -.0705                | .1327  | .4261  |        |                                       |

ALPHA ( 4 ) = 7.955 BETA ( 3 ) = 4.206 MACH = .89867 Q = 599.20 P = 1059.9 RN/L = 3.9837

| SECTION ( 1 ) ORBITER FUSELAGE |        | DEPENDENT VARIABLE CP |       |       |                                       |   |
|--------------------------------|--------|-----------------------|-------|-------|---------------------------------------|---|
| X/LB                           |        | .0000                 | .0080 | .0230 | .0460                                 | .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740 |
| PHI                            |        |                       |       |       |                                       |   |
| 000.000                        | 1.1573 | .7962                 | .3475 | .2230 | .1110                                 | -.0243  |
| 20.000                         |        |                       | .3342 | .1837 | .0947                                 | -.0438  |
| 40.000                         |        |                       | .3385 | .1673 | .0640                                 | -.0500  |
| 55.000                         |        |                       | .2982 | .1119 | .0227                                 | -.1156  |
| 70.000                         |        |                       | .2669 | .0814 | -.0014                                | -.1099  |
| 90.000                         | .3196  |                       | .2619 | .0764 | -.0090                                | -.3331  |
| 120.000                        |        |                       | .2535 | .1022 | .0172                                 | -.7701  |
| 140.000                        |        |                       | .2230 | .1472 | .0571                                 | -.6534  |
| 150.000                        |        |                       |       |       |                                       | -.1.0273  |
| 151.000                        |        |                       |       |       |                                       | .0685   |
| 162.000                        |        |                       |       |       |                                       | .1210   |
| 169.000                        |        |                       |       |       |                                       |   |
| 174.000                        | 1.1573 | .3729                 | .2254 | .1360 | .0912                                 | -.1.0552  |
| 180.000                        | .6520  | .7290                 | .7790 | .8210 | .8790 .9210 .9600 .9990 1.0180 1.0460 |   |

| SECTION ( 1 ) ORBITER FUSELAGE |        | DEPENDENT VARIABLE CP |       |       |                                       |   |
|--------------------------------|--------|-----------------------|-------|-------|---------------------------------------|---|
| X/LB                           |        | .0000                 | .0080 | .0230 | .0460                                 | .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740 |
| PHI                            |        |                       |       |       |                                       |   |
| 000.000                        | 1.1573 | .7962                 | .3475 | .2230 | .1110                                 | -.0243  |
| 20.000                         |        |                       | .3342 | .1837 | .0947                                 | -.0438  |
| 40.000                         |        |                       | .3385 | .1673 | .0640                                 | -.0500  |
| 55.000                         |        |                       | .2982 | .1119 | .0227                                 | -.1156  |
| 70.000                         |        |                       | .2669 | .0814 | -.0014                                | -.1099  |
| 90.000                         | .3196  |                       | .2619 | .0764 | -.0090                                | -.3331  |
| 120.000                        |        |                       | .2535 | .1022 | .0172                                 | -.7701  |
| 140.000                        |        |                       | .2230 | .1472 | .0571                                 | -.6534  |
| 150.000                        |        |                       |       |       |                                       | -.1.0273  |
| 151.000                        |        |                       |       |       |                                       | .0685   |
| 162.000                        |        |                       |       |       |                                       | .1210   |
| 169.000                        |        |                       |       |       |                                       |   |
| 174.000                        | 1.1573 | .3729                 | .2254 | .1360 | .0912                                 | -.1.0552  |
| 180.000                        | .6520  | .7290                 | .7790 | .8210 | .8790 .9210 .9600 .9990 1.0180 1.0460 |   |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8807)

ALPHA ( 4 ) = 7.955 BETA ( 3 ) = 4.206

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 .1110 .1050 .2264 -.4268 -.3156  
180.000 -.1248 -.0844 .3236

ALPHA ( 5 ) = 11.987 BETA ( 1 ) = -3.885 MACH = .88947 Q = 599.98 P = 1059.5 RNL = 3.5879

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CF

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1860 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.1024 .9305 .5041 .3424 .2372 .1374 .0714 .0483 .0252 .0474 .0966 .1812 .2126  
20.000 .5515 .3609 .2322 .1374 .0797 .0498 .0498 .0498 .0498 .0498 .0498 .0498 .0498  
40.000 .6217 .4022 .2891 .1971 .1139 .0562 .0127 .0633 .1125 .1798 .2601  
55.000 .5747 .3632 .2548 .1538 .0579 .0191 .0643 .2059 .1524 .0419  
70.000 .4943 .2971 .1828 .1476 .0491 .0553 .0553 .0553 .0553 .0553 .0553 .0553 .0553  
90.000 .5663 .4304 .2506 .1616 .1360 .1362 .1362 .1362 .1362 .1362 .1362 .1362 .1362  
120.000 .2972 .1471 .0599 .1362 .1362 .1362 .1362 .1362 .1362 .1362 .1362 .1362 .1362  
140.000 .1639 .0875 .0133 .1374 .1374 .1374 .1374 .1374 .1374 .1374 .1374 .1374 .1374  
150.000 .1639 .0875 .0133 .1374 .1374 .1374 .1374 .1374 .1374 .1374 .1374 .1374 .1374  
162.000 .1639 .0875 .0133 .1374 .1374 .1374 .1374 .1374 .1374 .1374 .1374 .1374 .1374  
165.000 .1639 .0875 .0133 .1374 .1374 .1374 .1374 .1374 .1374 .1374 .1374 .1374 .1374  
169.000 .1639 .0875 .0133 .1374 .1374 .1374 .1374 .1374 .1374 .1374 .1374 .1374 .1374  
174.000 .1639 .0875 .0133 .1374 .1374 .1374 .1374 .1374 .1374 .1374 .1374 .1374 .1374  
180.000 1.1024 .2541 .0912 .0613 .0138 .1460 .5677 .8190 .5956 .5633 .2263 .0480 .5677

X/LB

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .2174 .1635 .0798 -.0488 -.1300 -.1635 .0976 .5581 .2651  
40.000 .2423 .1088 -.0189 -.1778 -.1740 -.1740 -.0050 .4255 .1552  
70.000 .4528 .7327 .1744 .0051 .2539 .1645 .1370  
90.000 .3487 .5778 .0567 .0351 .2566 .2072 .1816  
105.000 .0188 .0759 .3262 .2784 .2380  
110.000 .0188 .0759 .3262 .2784 .2380  
120.000 .0057 .1306 .3711 .3030 .2359  
135.000 .0127 .1937 .3734 .2823 .2649  
150.000 .0227 .2828 .3249 .2720 .2799  
165.000 .0028 .0028 .1232 .2080 .3374  
180.000 .1394 .0562 .3476

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

**(XE8907)**

JAMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

|            |        |               |     |      |   |       |   |   |        |   |   |        |      |   |        |
|------------|--------|---------------|-----|------|---|-------|---|---|--------|---|---|--------|------|---|--------|
| DATE / S - | 11 OCT | DESTA ( 3 ) - | 149 | MACH | = | 08047 | D | = | 599.98 | P | = | 1059.5 | RN/L | = | 3.5679 |
|------------|--------|---------------|-----|------|---|-------|---|---|--------|---|---|--------|------|---|--------|

| SECTION 1108BITER FUSELAGE | DEPENDENT VARIABLE CP |
|----------------------------|-----------------------|
| 1                          | 1                     |
| 2                          | 2                     |
| 3                          | 3                     |
| 4                          | 4                     |
| 5                          | 5                     |
| 6                          | 6                     |
| 7                          | 7                     |
| 8                          | 8                     |
| 9                          | 9                     |
| 10                         | 10                    |
| 11                         | 11                    |
| 12                         | 12                    |
| 13                         | 13                    |
| 14                         | 14                    |
| 15                         | 15                    |
| 16                         | 16                    |
| 17                         | 17                    |
| 18                         | 18                    |
| 19                         | 19                    |
| 20                         | 20                    |
| 21                         | 21                    |
| 22                         | 22                    |
| 23                         | 23                    |
| 24                         | 24                    |
| 25                         | 25                    |
| 26                         | 26                    |
| 27                         | 27                    |
| 28                         | 28                    |
| 29                         | 29                    |
| 30                         | 30                    |
| 31                         | 31                    |
| 32                         | 32                    |
| 33                         | 33                    |
| 34                         | 34                    |
| 35                         | 35                    |
| 36                         | 36                    |
| 37                         | 37                    |
| 38                         | 38                    |
| 39                         | 39                    |
| 40                         | 40                    |
| 41                         | 41                    |
| 42                         | 42                    |
| 43                         | 43                    |
| 44                         | 44                    |
| 45                         | 45                    |
| 46                         | 46                    |
| 47                         | 47                    |
| 48                         | 48                    |
| 49                         | 49                    |
| 50                         | 50                    |
| 51                         | 51                    |
| 52                         | 52                    |
| 53                         | 53                    |
| 54                         | 54                    |
| 55                         | 55                    |
| 56                         | 56                    |
| 57                         | 57                    |
| 58                         | 58                    |
| 59                         | 59                    |
| 60                         | 60                    |
| 61                         | 61                    |
| 62                         | 62                    |
| 63                         | 63                    |
| 64                         | 64                    |
| 65                         | 65                    |
| 66                         | 66                    |
| 67                         | 67                    |
| 68                         | 68                    |
| 69                         | 69                    |
| 70                         | 70                    |
| 71                         | 71                    |
| 72                         | 72                    |
| 73                         | 73                    |
| 74                         | 74                    |
| 75                         | 75                    |
| 76                         | 76                    |
| 77                         | 77                    |
| 78                         | 78                    |
| 79                         | 79                    |
| 80                         | 80                    |
| 81                         | 81                    |
| 82                         | 82                    |
| 83                         | 83                    |
| 84                         | 84                    |
| 85                         | 85                    |
| 86                         | 86                    |
| 87                         | 87                    |
| 88                         | 88                    |
| 89                         | 89                    |
| 90                         | 90                    |
| 91                         | 91                    |
| 92                         | 92                    |
| 93                         | 93                    |
| 94                         | 94                    |
| 95                         | 95                    |
| 96                         | 96                    |
| 97                         | 97                    |
| 98                         | 98                    |
| 99                         | 99                    |
| 100                        | 100                   |

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660  | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|--------|-------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |        |       |        |        |        |        |        |       |
| 20.000  | 1.1112 | .9368 | .5084 | .3479 | .2466 | .1258 |       | .0780  |       | .0497  | .0310  | .0493  | .1001  | .1878  | .2169 |
| 40.000  |        |       | .5191 | .3377 | .2128 | .1378 |       | .0697  |       | .0353  |        |        | .0825  | .1593  | .2427 |
| 60.000  |        |       | .5273 | .3332 | .2224 | .1379 |       | .0697  |       | .0090  | -.0517 | -.0065 |        |        |       |
| 80.000  |        |       | .4425 | .2471 | .1363 | .0521 |       | -.0327 |       | .0933  |        |        |        |        |       |
| 100.000 |        |       | .3845 | .2471 | .1363 | .0521 |       | -.0241 |       | -.1259 | -.5235 | -.2688 | -.1954 | -.0852 |       |
| 120.000 |        | .4148 | .3214 | .1524 | .0782 | .0709 |       | -.0065 |       | -.2086 | -.6452 | -.2331 | -.2068 | -.0797 |       |
| 140.000 |        |       | .2376 | .0965 | .0140 | .1229 |       | .1386  |       | -.3411 | -.7352 | -.4350 | -.3056 | -.1508 |       |
| 160.000 |        |       |       |       |       |       |       |        |       | -.4951 |        |        |        |        |       |
| 180.000 |        |       |       |       |       |       |       | .4886  |       | -.7275 | -.5895 | -.5151 | -.2061 | -.0478 |       |
| 200.000 |        |       | .1491 | .0889 | .0081 | .1421 |       | .1640  |       |        |        |        |        |        |       |
| 220.000 |        |       |       |       |       |       |       | .1808  |       |        |        |        |        |        |       |
| 240.000 |        |       |       |       |       |       |       |        |       | -.9846 | -.6046 | -.5260 | -.2034 | -.0086 |       |
| 260.000 |        |       |       |       |       |       |       | .5182  |       |        |        |        |        |        |       |
| 280.000 |        |       |       |       |       |       | .6140 |        |       |        |        |        |        |        |       |
| 300.000 |        |       |       |       |       |       |       | .4915  |       |        |        |        |        |        |       |
| 320.000 |        |       |       |       |       |       |       |        |       |        |        |        |        |        |       |
| 340.000 |        |       |       |       |       |       |       |        |       |        |        |        |        |        |       |
| 360.000 |        |       |       |       |       |       |       |        |       |        |        |        |        |        |       |
| 380.000 |        |       |       |       |       |       |       |        |       |        |        |        |        |        |       |
| 400.000 | 1.1112 | .2403 | .1108 | .0590 | .0195 | .1573 |       |        |       | -.7777 | -.6182 | -.5351 | -.1795 | .0082  |       |

| PHI     |        |        |        |        |  |  |
|---------|--------|--------|--------|--------|--|--|
| .000    | .2233  | .1721  | .0853  | -.0425 |  |  |
| 40.000  | .2349  |        | .1076  | -.0181 |  |  |
| 70.000  | .4744  | -.7392 | -.2221 | -.0993 |  |  |
| 90.000  | -.3535 | -.5968 | -.1332 | -.0492 |  |  |
| 105.000 |        |        | -.0466 | .0112  |  |  |
| 110.000 |        |        |        |        |  |  |
| 120.000 | -.2759 | -.2924 | .0016  | .0748  |  |  |
| 135.000 |        |        | .0103  | .2644  |  |  |
| 150.000 | -.2142 | -.2043 | .0378  | .3711  |  |  |
| 165.000 | -.1542 |        | .0717  |        |  |  |
| 180.000 | -.1529 | -.1225 | .0763  | .3639  |  |  |

|               |        |              |       |      |   |        |   |   |        |   |   |        |      |   |        |
|---------------|--------|--------------|-------|------|---|--------|---|---|--------|---|---|--------|------|---|--------|
| ALPHA ( 5 ) = | 11.097 | BETA ( 3 ) = | 4.223 | HACH | = | .89947 | Q | = | 599.98 | P | = | 1059.5 | RM/L | = | 3.5879 |
|---------------|--------|--------------|-------|------|---|--------|---|---|--------|---|---|--------|------|---|--------|

SECTION (1) ORBITER FUSELAGE

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|--------|--------|--------|--------|-------|
| PHI     | 1.0962 | .9222 | .4981 | .3459 | .2307  |        |       | .0722  | .0216  | .0391  | .0996  | .1765  | .2086 |
| 20.000  |        |       | .4665 | .2979 | .1775  | .0982  |       | .0091  |        |        |        |        |       |
| 40.000  |        |       | .4095 | .2496 | .1496  | .0706  |       | .0104  |        |        |        |        |       |
| 55.000  |        |       | .2962 | .1201 | .0228  | -.0409 |       | -.0582 | -.1234 | -.0811 | .0310  | .1173  | .2098 |
| 70.000  |        |       | .2405 | .0771 | -.0219 | .0104  |       | -.1543 |        |        |        |        |       |
| 90.000  | .2570  |       | .2170 | .0580 | -.0186 | .0211  |       | -.0841 | -.5970 | -.3490 | -.2340 | -.1321 |       |
| 120.000 |        |       | .1737 | .0436 | -.0295 | .1031  |       | -.2816 | -.7315 | -.2040 | -.2040 | -.0902 |       |
|         |        |       |       |       |        |        |       | -.4417 | -.6824 | -.3521 | -.2488 | -.0688 |       |



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB808) ( 05 AUG 75 )

## REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO  
 LREF = 474.8000 IN. YMRP = .0000 IN. YO  
 BRUF = 936.0680 IN. ZMRP = 375.0000 IN. ZO  
 SCALE = .0300

ALPHA ( 1 ) = -4.017 BETA ( 1 ) = -3.884 MACH = 1.3953 Q = 598.61 P = 439.24 RNL = 2.9166

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | PHI    | 0.000 | 0.080 | 0.230 | 0.460 | 0.700  | 1.120  | 1.580  | 1.770  | 2.040  | 2.510  | 3.010  | 3.780  | 4.970  | 5.740  |
|---------|--------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 20.000  | 1.4763 | .6767 | .2040 | .8774 | .0079 | -.0774 | -.0552 | -.1002 | -.0686 | -.1358 | -.1943 | -.1014 | -.0632 | -.0632 | -.0632 |
| 40.000  |        |       | .2584 | .0906 | .0120 | -.0552 | -.1178 | -.1178 | -.0686 | -.1358 | -.1943 | -.1014 | -.0632 | -.0632 | -.0632 |
| 55.000  |        |       | .4444 | .1215 | .0615 | -.0552 | -.1178 | -.1178 | -.0686 | -.1358 | -.1943 | -.1014 | -.0632 | -.0632 | -.0632 |
| 70.000  |        |       | .5950 | .3126 | .2321 | .1047  | .2248  | .2875  | .1480  | -.1098 | -.1298 | -.0304 | -.0304 | -.0304 | -.0304 |
| 90.000  |        | .9395 | .6853 | .4112 | .3119 | .2169  | .2652  | .5649  | .1132  | -.0992 | -.2951 | -.1717 | -.1112 | -.0646 | -.0646 |
| 120.000 |        |       | .7515 | .4877 | .3352 | .4715  | .9998  |        |        |        |        |        |        |        |        |
| 140.000 |        |       | .8119 | .6095 | .4456 |        |        |        |        |        |        |        |        |        |        |
| 150.000 |        |       | .7939 | .6419 | .4799 | .5542  |        |        |        |        |        |        |        |        |        |
| 162.000 |        |       |       |       |       |        |        |        |        |        |        |        |        |        |        |
| 165.000 |        |       |       |       |       |        |        |        |        |        |        |        |        |        |        |
| 169.000 |        |       |       |       |       |        |        |        |        |        |        |        |        |        |        |
| 174.000 |        |       |       |       |       |        |        |        |        |        |        |        |        |        |        |
| 180.000 |        |       |       |       |       |        |        |        |        |        |        |        |        |        |        |

| X/LB    | PHI    | 1.4763 | 1.0255 | .7297  | .6023  | .4739  | .5547  | 1.0599 | .9957  | -.2519 | -.2903 | -.1453 | -.1281 | -.1036 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 40.000  | 1.4763 | .0258  | -.0280 | -.0448 | -.0926 | -.1593 | -.2073 | -.2638 | -.3093 | -.3093 | -.3093 | -.3093 | -.3093 | -.3093 |
| 70.000  |        | .0729  | .0191  | -.0506 | -.1037 | -.1733 | -.1577 | -.3153 | -.3093 | -.3093 | -.3093 | -.3093 | -.3093 | -.3093 |
| 90.000  |        | .0644  | .0487  | .0528  | .1962  | .1196  | .0499  | -.0015 | -.0015 | -.0015 | -.0015 | -.0015 | -.0015 | -.0015 |
| 105.000 |        |        |        | .1953  | .2317  | .0219  | -.0220 | -.0542 | -.0542 | -.0542 | -.0542 | -.0542 | -.0542 | -.0542 |
| 110.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 120.000 |        | .0352  | .0600  | .3451  | .2792  | .0706  | -.0540 | -.0384 | -.0384 | -.0384 | -.0384 | -.0384 | -.0384 | -.0384 |
| 135.000 |        |        |        | .3759  | .4125  | .1055  | .0677  | .0501  | .0501  | .0501  | .0501  | .0501  | .0501  | .0501  |
| 150.000 |        | -.0149 | .0358  | .3789  | .4093  | .1721  | .1937  | .0990  | .0990  | .0990  | .0990  | .0990  | .0990  | .0990  |
| 165.000 |        | -.0230 |        | .3797  | .4823  | .3013  | -.2486 |        |        |        |        |        |        |        |
| 180.000 |        | -.0193 | .0097  | .3688  | .4593  |        |        |        |        |        |        |        |        |        |

## PARAMETRIC DATA

RUDDER = .000 SPOBRK = 85.000  
 BOFLAP = 22.500 L-ELVN = .000  
 R-ELVN = .000 MACH = 1.400

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TABULATED PRESSURE DATA - 04148 ( AMES 11-073-1 )

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AMES 11-073(04148) -140A/B/C/R ORB FUSELAGE

(XE8808)

ALPHA ( 1 ) = -3.966 BETA ( 2 ) = .195 MACH = 1.3953 Q = 598.61 P = 439.24 RM/L = 2.9166

## SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4570  | .5740 |
|---------|--------|--------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |       |       |       |        |        |        |        |        |        |        |        |        |       |
| 20.000  | 1.4791 | .6744  | .2094 | .0803 | .0170 |        |        | -.0581 | -.0369 | -.0031 | -.0197 | -.0443 | -.0543 | -.0562 |       |
| 40.000  |        |        | .2439 | .0873 | .0056 | -.0527 |        | -.0536 | -.0518 |        |        |        |        |        |       |
| 55.000  |        |        | .3872 | .1111 | .0494 | -.0534 |        | -.0586 | -.1223 | -.1172 | -.1115 | -.0634 | -.0625 | -.0484 |       |
| 70.000  |        |        | .5052 | .2280 | .1661 | .0384  |        | .0665  | .0300  |        |        |        |        |        |       |
| 90.000  |        | .7962  | .5783 | .3035 | .2197 | .1269  |        | .1509  | .0717  | -.2472 | -.1692 | -.1122 | .0014  |        |       |
| 120.000 |        |        | .6399 | .3785 | .2297 | .1604  |        | .1996  | -.0111 | -.2429 | -.2428 | -.1334 | -.0060 |        |       |
| 140.000 |        |        | .7171 | .5206 | .3542 | .3741  |        | .4566  | .0436  | -.1887 | -.4084 | -.1821 | -.0598 |        |       |
| 150.000 |        |        | .7408 | .6073 | .4490 | .5120  |        |        | -.0731 | -.3030 | -.1887 | -.1439 | -.0759 |        |       |
| 162.000 |        |        |       |       |       |        |        |        | .6532  |        |        |        |        |        |       |
| 165.000 |        |        |       |       |       |        |        |        | .7371  |        |        |        |        |        |       |
| 169.000 |        |        |       |       |       |        |        |        |        | -.1565 | -.2810 | -.1494 | -.1289 | -.0812 |       |
| 174.000 |        |        |       |       |       |        |        |        |        | -.2946 | -.3089 | -.1115 | -.1225 | -.0819 |       |
| 180.000 | 1.4791 | 1.0105 | .7317 | .6059 | .4825 | .5541  | 1.0909 | 1.0336 |        |        |        |        |        |        |       |
| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790 | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |

## PHI

|         |        |        |        |        |        |        |        |        |       |       |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--|--|--|--|--|
| 20.000  | -.0229 | -.0177 | -.0398 | -.0863 | -.1595 | -.2067 | -.2659 |        | .1771 | .2829 |  |  |  |  |  |
| 40.000  | -.0476 |        | -.0610 | -.0911 | -.1631 | -.1576 | -.2900 |        | .1582 | .1846 |  |  |  |  |  |
| 70.000  | .0543  | .0088  | -.0053 | .2201  | .1007  | .0093  | -.0036 |        |       |       |  |  |  |  |  |
| 90.000  | .0646  | .0315  | .1419  | .1882  | .0625  | -.0001 | -.0402 |        |       |       |  |  |  |  |  |
| 105.000 |        |        | .2664  | .2122  | -.0235 | -.0585 | -.0855 |        |       |       |  |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        | -.1977 |       |       |  |  |  |  |  |
| 120.000 | .0384  | .0553  | .2911  | .1384  | .0238  | -.1130 | -.1331 | -.2037 |       |       |  |  |  |  |  |
| 135.000 |        |        | .3857  | .3817  | .0716  | .0107  | -.0241 |        |       |       |  |  |  |  |  |
| 150.000 | .0037  | .0384  | .3909  | .4138  | .1670  | .1012  | .0193  |        |       |       |  |  |  |  |  |
| 165.000 | -.0039 |        | .4033  |        | .4117  | .1864  | -.3214 |        |       |       |  |  |  |  |  |
| 180.000 | -.0054 | .0169  | .4021  | .5249  |        |        |        |        |       |       |  |  |  |  |  |

ALPHA ( 1 ) = -4.012 BETA ( 3 ) = 4.241 MACH = 1.3953 Q = 598.61 P = 439.24 RM/L = 2.9166

## SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4570  | .5740 |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |        |        |       |        |        |        |        |        |        |        |       |
| 20.000  | 1.4647 | .6565 | .2014 | .0654 | .0185  |        |       | -.0628 | -.0478 | -.0104 | -.0190 | -.0428 | -.0693 | -.0650 |       |
| 40.000  |        |       | .2134 | .0699 | -.0051 | -.0466 |       | -.0574 | -.0407 |        |        |        |        |        |       |
| 55.000  |        |       | .3191 | .0811 | .0261  | -.0543 |       | -.0476 | -.0826 | -.0786 | -.0800 | -.0610 | -.0772 | -.0419 |       |
| 70.000  |        |       | .4107 | .1531 | .0985  | -.0124 |       | .0327  | -.0018 |        |        |        |        |        |       |
| 90.000  |        | .6460 | .4750 | .2057 | .1312  | .0503  |       | .0877  | .0138  | -.2943 | -.2295 | -.1437 | -.0157 |        |       |
| 120.000 |        |       | .5330 | .2748 | .1345  | .0679  |       | .1164  | -.1119 | -.3082 | -.3029 | -.1589 | -.0218 |        |       |
|         |        |       | .6220 | .4329 | .2662  | .2797  |       | .3444  | -.0618 | -.2580 | -.4600 | -.2431 | -.0679 |        |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-373(0A148) -140A/B/C/R ORB FUSELAGE

(XE6808)

ALPHA ( 1 ) = -4.012 BETA ( 3 ) = 4.241

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

X/LB

PHI

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 105.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 110.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 135.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

ALPHA ( 2 ) = -.007 BETA ( 1 ) = -3.899 MACH = 1.3961 Q = 598.93 P = 439.00 RW/L = 2.9179

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 20.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 55.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

1.0342



DATE 10 FEB 76 TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

(XE8808)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( ° ) = -.001 BETA ( 2 ) = .155

SECTION ( 1 ) ORBITTER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

70.000 -.0096 -.0961 -.1301 .0596 .0163 -.0570 -.0601  
90.000 .0223 -.0483 .0077 .0979 -.0241 -.0530 -.1088  
105.000 .1493 .1202 -.1305 -.1248 -.1479  
110.000  
120.000 .0134 .0074 .2604 .1976 .0043 -.1489 -.2318  
135.000 .2769 .3305 .0724 -.0398 -.0809  
150.000 -.0076 .0173 .2852 .3526 .1140 .0520 -.0388  
165.000 -.0150 .3122 .3319 .1243 -.3142  
180.000 -.0133 .0067 .3162 .4524

ALPHA ( 2 ) = -.006 BETA ( 3 ) = 4.218 MACH = 1.3961 Q = 598.93 P = 439.00 RW/L = 2.9179

SECTION ( 1 ) ORBITTER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

20.000 1.4720 .7859 .3238 .1495 .0936 .0160  
40.000 .3229 .1505 .0663 .0160  
55.000 .3959 .1611 .0982 .0146  
70.000 .4544 .2076 .1505 .0387  
90.000 .4865 .2250 .1534 .0655  
120.000 .5222 .2695 .1443 .0727  
140.000 .5667 .3671 .2255 .2118  
150.000 .5868 .4856 .3038 .2992  
162.000  
165.300  
169.000  
174.000  
180.000 1.4720 .8628 .6120 .5156 .3742 .3847 .9716  
1.4720 .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

40.000 -.0251 .0110 .0006 -.0324 -.0947 -.1402 -.1887  
70.000 .0120 .0146 .0146 -.0160 -.0988 -.0981 -.2082  
90.000 -.0127 .1185 -.1016 .0758 -.0073 -.0924 -.1103  
105.000 .0151 -.0574 .0246 .0804 -.0581 -.0966 -.1454  
110.000 .1631 .1268 -.1684 -.1657 -.1844  
120.000 .0170 .0061 .2175 .0577 -.0723 -.2155 -.3291  
135.000 .2798 .2946 .2942 .0820 -.0290 -.1174  
150.000 -.0146 .0172 .2946 .0820 -.0290 -.1174

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -14 A/B/C/R ORB FUSELAGE

(0530000)

ALPHA ( 2 ) = -.008 BETA ( 3 ) = 4.218

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0480 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| PHI     |        |       |       |       |       |       |       |       |        |        |
| 155.000 | -.0241 |       | .3029 |       | .2445 | .0945 | -.515 |       |        |        |
| 180.000 | -.0285 | .0101 | .3033 | .3385 |       |       |       |       |        |        |

ALPHA ( 3 ) = 3.849 BETA ( 1 ) = -3.908 MACH = 1.959 Q = 599.13 P = 439.24 RN/L = 2.9208

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1660 | .1770  | .2040  | .2510  | .3018  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 20.000  | 1.4712 | .9201 | .4325 | .2812 | .1663 |       | .0419 | .0275  | .0309  | .0287  | .0412  | .0119  | .0086  |       |
| 40.000  |        |       | .4783 | .2872 | .1732 | .6732 | .0586 | .0148  | .0177  | .0458  | .0388  | .0059  | .0253  |       |
| 55.000  |        |       | .6209 | .3458 | .2522 | .1270 | .0881 |        |        |        |        |        |        |       |
| 70.000  |        |       | .6917 | .4325 | .3423 | .2049 | .1774 | .1710  |        |        |        |        |        |       |
| 85.000  |        |       |       | .4435 | .3401 | .2278 | .1878 | .2079  | -.1402 | -.0523 | -.0480 | -.0913 |        |       |
| 90.000  | .8726  |       | .6988 | .4435 | .3282 | .2327 | .2629 | .1885  | -.1352 | -.1135 | -.0973 | -.0916 |        |       |
| 120.000 |        |       | .6622 | .4706 | .3323 | .3021 | .5493 | .1700  | -.1208 | -.3218 | -.2424 | -.1554 |        |       |
| 140.000 |        |       |       |       |       |       |       | .1012  |        |        |        |        |        |       |
| 150.000 |        |       | .5684 | .4432 | .2737 | .2933 | .9387 | -.1313 | -.3957 | -.3287 | -.1919 | -.1171 |        |       |
| 162.000 |        |       |       |       |       |       |       | .7039  |        |        |        |        |        |       |
| 165.000 |        |       |       |       |       |       |       | .7467  |        |        |        |        |        |       |
| 169.000 |        |       |       |       |       |       |       |        | -.2494 | -.3633 | -.2815 | -.1914 | -.1002 |       |
| 174.000 |        |       |       |       |       |       | .9884 |        |        |        |        |        |        |       |
| 180.000 | 1.4712 | .7655 | .4821 | .4154 | .2522 | .2708 | .6515 | .9102  | -.3508 | -.3918 | -.2443 | -.2055 | -.0853 |       |

X/LC .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0480

PHI

| X/LB    | .0318  | .0422  | .0558  | .0290  | -.0312 | -.0824 | -.1315 | .3423 | .4138 |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| 40.000  | .0503  |        | .0551  | .0278  | -.0527 | -.0406 | -.1829 | .3423 | .4138 |
| 70.000  | -.0281 | -.1534 | -.2037 | -.0560 | -.0206 | -.0788 | -.1844 | .3024 | .3058 |
| 90.000  | -.0229 | -.0831 | -.1791 | .0520  | -.0822 | -.1433 |        |       |       |
| 105.000 |        |        | -.1197 | .1071  | -.1080 | -.2032 | -.1766 |       |       |
| 110.000 |        |        |        |        |        |        |        |       |       |
| 120.000 | -.0853 | -.1020 | .1918  | .1508  | -.0091 | -.1598 | -.2260 |       |       |
| 135.000 |        |        | .2289  | .2269  | -.0258 | -.1340 | -.1926 |       |       |
| 150.000 | -.0543 | -.0122 | .2218  | .2346  | -.0570 | .0475  | -.1351 |       |       |
| 155.000 | -.0482 |        | .2397  | .2801  | .1668  | -.1584 |        |       |       |
| 180.000 | -.0346 | .0429  | .2191  | .2881  |        |        |        |       |       |

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(XEBB08)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 3 ) = 3.967 BETA ( 2 ) = .154 MACH = 1.3959 Q = 599.13 P = 439.24 RVL = 2.9206

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | .9218 | .4387 | .2611 | .1762 |       |       | .0479 | .0311  | .0217  | .0428  | .0518  | .0203  | .0209  |       |
| 20.000  |       |       | .4558 | .2674 | .1638 | .0890 |       | .0477 | .0205  | .0627  | .0287  | .0420  | .0072  | .0152  |       |
| 40.000  |       |       | .5483 | .3005 | .2159 | .1042 |       | .0741 | .0090  |        |        |        |        |        |       |
| 55.000  |       |       | .5862 | .3367 | .2650 | .1349 |       | .1166 | .1105  |        |        |        |        |        |       |
| 70.000  |       |       | .5895 | .3312 | .2507 | .1428 |       | .1185 | .1515  | -.1827 | -.1101 | -.1034 | -.1175 |        |       |
| 90.000  |       | .7295 | .5950 | .3513 | .2348 | .1454 |       | .1982 | .1102  | -.1916 | -.1751 | -.1511 | -.0968 |        |       |
| 120.000 |       |       | .5811 | .3994 | .2593 | .2372 |       | .4732 | .0774  | -.1973 | -.3727 | -.2052 | -.1136 |        |       |
| 140.000 |       |       |       |       |       |       |       |       | -.0040 |        |        |        |        |        |       |
| 150.000 |       |       | .5301 | .4313 | .2455 | .2626 |       | .8417 | -.2115 | -.4027 | -.2960 | -.1801 | -.0754 |        |       |
| 151.000 |       |       |       |       |       |       |       |       | .6173  |        |        |        |        |        |       |
| 162.000 |       |       |       |       |       |       |       |       | .6881  |        |        |        |        |        |       |
| 165.000 |       |       |       |       |       |       |       |       |        | -.2484 | -.3679 | -.2588 | -.1925 | -.0642 |       |
| 169.000 |       |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 174.000 |       |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 180.000 |       |       |       |       |       |       |       |       |        |        |        |        |        |        |       |

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

|         |        |        |        |        |        |        |        |        |       |       |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--|--|--|--|--|
| PHI     | .000   | .0554  | .0639  | .0374  | -.0291 | -.0790 | -.1183 |        |       |       |  |  |  |  |  |
| 40.000  |        |        | .0716  | .0408  | -.0388 | -.0460 | -.1543 |        | .3376 | .4056 |  |  |  |  |  |
| 70.000  |        | -.1819 | -.2022 | -.0436 | -.0309 | -.1175 | -.1151 |        | .2812 | .2924 |  |  |  |  |  |
| 90.000  |        | -.0236 | -.1275 | -.0718 | -.1257 | -.1248 | -.1690 |        |       |       |  |  |  |  |  |
| 105.000 |        |        | .0740  | .0718  | -.1869 | -.2421 | -.2001 |        |       |       |  |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        | -.2882 |       |       |  |  |  |  |  |
| 120.000 | -.0233 | -.0445 | .1831  | .1297  | -.0366 | -.1838 | -.2638 | -.2970 |       |       |  |  |  |  |  |
| 135.000 |        |        | .1976  | .2337  | .0244  | -.0915 | -.1321 |        |       |       |  |  |  |  |  |
| 150.000 | -.0221 | -.0043 | .2002  | .3339  | .0796  | -.0015 | -.0895 |        |       |       |  |  |  |  |  |
| 165.000 | -.0250 |        | .2138  | .3339  | .2688  | .0699  | -.3126 |        |       |       |  |  |  |  |  |
| 180.000 | -.0248 | -.0066 | .2183  | .4310  |        |        |        |        |       |       |  |  |  |  |  |

ALPHA ( 3 ) = 3.885 BETA ( 3 ) = 4.208 MACH = 1.3959 Q = 599.13 P = 439.24 RVL = 2.9206

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | .9058 | .4292 | .2583 | .1830 |       |       | .0381 | .0249  | .0208  | .0336  | .0561  | .0189  | .0120  |       |
| 20.000  |       |       | .4170 | .2401 | .1473 | .0714 |       | .0271 | .0095  |        |        |        |        |        |       |
| 40.000  |       |       | .4615 | .2494 | .1685 | .0781 |       | .0483 | -.0051 | .0591  | .0244  | .0418  | -.0139 | -.0013 |       |
| 55.000  |       |       | .4788 | .2472 | .1839 | .0682 |       | .0554 | .0608  |        |        |        |        |        |       |
| 70.000  |       |       | .4812 | .2351 | .1659 | .0713 |       | .0604 | .1018  | -.2222 | -.1596 | -.1549 | -.1196 |        |       |
| 90.000  |       | .5770 | .4360 | .2367 | .1521 | .0697 |       | .1407 | .0335  | -.2411 | -.2310 | -.1953 | -.1016 |        |       |
| 120.000 |       |       | .5011 | .3338 | .1944 | .1687 |       | .3668 | -.0060 | -.2737 | -.4270 | -.1753 | -.0833 |        |       |



## DATE 10 FEB 76 TABULATED PRESSURE DATA - 0A148 ( ANES 11-073-1 )

(XEB808)

ANES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 7.868 BETA ( 1 ) = -3.901

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1560 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI 180.000 1.4362 .6188 .3591 .3108 .1769 .1829 .6620 -.3868 -.4300 -.2751 -.2220 -.0739

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI 000 .0953 .1108 .1281 .0967 .0365 -.0145 -.0603 .4533 .5091

40.000 .1298 .1441 .1441 .1109 .0151 .0132 -.1021 .3934 .3784

70.000 -.1388 -.2398 -.2033 -.2454 -.1424 -.1404 -.0383

90.000 -.0893 -.1977 -.2484 -.0330 -.1327 -.1948 -.2235

105.000 .0130 -.1644 -.2709 -.2860

110.000 .0685 -.0605 -.1989 -.2525

120.000 -.1837 -.1722 .0703 .0587 .1099 -.0573 -.1423 -.1312

135.000 -.0903 -.0309 .0520 .1198 .0332 .0015 -.1033

150.000 .0646 .0760 .2379 .1244 -.3080

165.000 -.0511 -.0360 .1200 .3512

180.000

ALPHA ( 4 ) = 7.941 BETA ( 2 ) = .144 MACH = 1.3952 Q = 599.12 P = 439.71 RW/L = 2.9176

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1560 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI 000 1.4440 1.0409 .5527 .3790 .2736 .1183 .0932 .0776 .0692 .1058 .0813 .0802

20.000 .5694 .3714 .2510 .1636 .1124 .0822 .0628 .1011 .0984 .0984 .0651 .0754

40.000 .6243 .3925 .2926 .1760 .1428 .0776 .1485 -.1502 -.0844 -.0951 -.1565

55.000 .6118 .3745 .2528 .1518 .1214 .1485 -.1502 -.0844 -.0951 -.1565

70.000 .5807 .3390 .2493 .1525 .1197 .1521 -.1648 -.1242 -.1434 -.1685

90.000 .5611 .3293 .2284 .1335 .1340 .1014 -.1861 -.3596 -.3291 -.1793

105.000 .5075 .3214 .2103 .1834 .4516 .0129 .1861 -.3420 -.1861 -.0736

120.000 .4261 .3340 .1784 .1924 .7927 .6021 .4353 -.3420 -.1861 -.0736

140.000 .5694 .3714 .2510 .1636 .1124 .0822 .0628 .1011 .0984 .0984 .0651 .0754

151.000 .6243 .3925 .2926 .1760 .1428 .0776 .1485 -.1502 -.0844 -.0951 -.1565

162.000 .6118 .3745 .2528 .1518 .1214 .1485 -.1502 -.0844 -.0951 -.1565

165.000 .5807 .3390 .2493 .1525 .1197 .1521 -.1648 -.1242 -.1434 -.1685

169.000 .5611 .3293 .2284 .1335 .1340 .1014 -.1861 -.3596 -.3291 -.1793

174.000 .5075 .3214 .2103 .1834 .4516 .0129 .1861 -.3420 -.1861 -.0736

180.000

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI 000 .0897 .1213 .1443 .1149 .0444 -.0076 -.0499

40.000 .1177 .1590 .1443 .1230 .0393 .0138 -.0947

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(XEB808)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 7.941 BETA ( 2 ) = .144

SECTION ( 1 ) ORBITER FUSELAGE

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0480 |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|
| PHI     |        |        |        |        |        |        |        |       |        |        |
| 70.000  | -.1382 | -.2460 | -.2694 | -.1091 | -.1583 | -.1678 | -.1548 |       |        |        |
| 90.000  | -.0790 | -.1860 | -.2362 | -.0160 | -.1923 | -.2101 | -.2160 |       |        |        |
| 105.000 |        |        | -.0489 | .0457  | -.2320 | -.3054 | -.2696 |       |        |        |
| 110.000 |        |        |        |        |        |        | -.3210 |       |        |        |
| 120.000 | -.0665 | -.0858 | .0842  | .0439  | -.0826 | -.2104 | -.2893 |       |        |        |
| 135.000 |        |        | .0901  | .1373  | -.0300 | -.1349 | -.1781 |       |        |        |
| 150.000 | -.0403 | -.0436 | .0816  | .3628  | .0321  | -.0525 | -.1308 |       |        |        |
| 165.000 | -.0382 | .0951  | .0951  | .2302  | .0061  | -.3219 |        |       |        |        |
| 180.000 | -.0295 | -.0302 | .0996  | .4689  |        |        |        |       |        |        |

ALPHA ( 4 ) = 7.942 BETA ( 3 ) = 4.207 MACH = 1.3952 Q = 599.12 P = 439.71 RW/L = 2.9176

SECTION ( 1 ) ORBITER FUSELAGE

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|-------|
| PHI     |        |        |       |       |       |       |       |        |        |        |        |        |        |       |       |
| 20.000  | 1.4332 | 1.0304 | .5444 | .3736 | .2763 | .1360 | .0871 | .1061  | .0808  | .0691  | .0611  | .1079  | .0748  | .0703 |       |
| 40.000  |        |        | .5255 | .3474 | .2316 | .1270 | .0563 | .0871  | .0628  | .0535  | .0662  | .0853  | .0358  | .0539 |       |
| 55.000  |        |        | .5315 | .3377 | .2423 | .1270 | .0563 | .0548  | .0254  | .0168  |        |        |        |       |       |
| 70.000  |        |        | .4977 | .2823 | .2088 | .0714 | .0612 | .0548  | .0168  |        |        |        |        |       |       |
| 90.000  |        | .5370  | .4737 | .2442 | .1676 | .0780 | .0825 | .0825  | .0774  | -.1678 | -.1383 | -.1493 | -.2014 |       |       |
| 120.000 |        |        | .4680 | .2385 | .1517 | .0619 | .3739 | .0216  | .0216  | -.2144 | -.1824 | -.1931 | -.1560 |       |       |
| 140.000 |        |        | .4392 | .2682 | .1548 | .1346 |       | -.0955 | -.0955 | -.2597 | -.4050 | -.2300 | -.1101 |       |       |
| 150.000 |        |        | .3896 | .3189 | .1403 | .1526 | .7359 | -.2858 | -.4458 | -.3350 | -.1874 | -.0631 |        |       |       |
| 162.000 |        |        |       |       |       |       |       |        | .5081  |        |        |        |        |       |       |
| 165.000 |        |        |       |       |       |       |       |        | .5827  |        |        |        |        |       |       |
| 169.000 |        |        |       |       |       |       |       | .8434  |        |        |        |        |        |       |       |
| 174.000 |        |        |       |       |       |       |       |        |        |        |        |        |        |       |       |
| 180.000 | 1.4332 | .5832  | .3728 | .3417 | .1935 | .1828 | .7914 | .8914  | -.2992 | -.4382 | -.2674 | -.2174 | -.0619 |       |       |
| X/LB    | .5520  | .7290  | .7790 | .8210 | .8790 | .9210 | .9600 | .9990  | 1.0180 | 1.0460 |        |        |        |       |       |

|         |        |        |        |        |        |        |        |  |  |  |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--|--|--|--|--|--|--|--|
| PHI     |        |        |        |        |        |        |        |  |  |  |  |  |  |  |  |
| 40.000  | .0803  | .1183  | .1276  | .1075  | .0411  | -.0087 | -.0635 |  |  |  |  |  |  |  |  |
| 70.000  | .0979  | .1592  | .1592  | .1294  | .0416  | .0019  | -.1051 |  |  |  |  |  |  |  |  |
| 90.000  | -.1277 | -.2337 | -.2689 | -.1058 | -.1486 | -.1780 | -.2801 |  |  |  |  |  |  |  |  |
| 105.000 | -.0734 | -.1774 | -.1558 | -.0304 | -.2133 | -.2046 | -.2082 |  |  |  |  |  |  |  |  |
| 110.000 |        |        | .0143  | -.0082 | -.2837 | -.3360 | -.2788 |  |  |  |  |  |  |  |  |
| 120.000 | -.0330 | -.0609 | .0646  | -.0646 | -.1269 | -.2705 | -.3745 |  |  |  |  |  |  |  |  |
| 135.000 |        |        | .1345  | .2299  | -.0825 | -.1773 | -.2173 |  |  |  |  |  |  |  |  |
| 150.000 | -.0331 | -.0281 | .1438  | .2928  | -.0453 | -.1252 | -.1939 |  |  |  |  |  |  |  |  |



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB808)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 5 ) = 11.897 BETA ( 2 ) = .146 MACH = 1.3944 Q = 599.11 P = 440.18 RN/L = 2.9183

## SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|--------|--------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|-------|
| PHI     | .000   | 1.3957 | 1.1537 | .6725 | .4882 | .3721 |       | .1887 | .1583  | .1312  | .1213  | .1469  | .1550  | .1433 |       |
| 20.000  |        |        |        | .6830 | .4840 | .3423 | .2386 | .1796 | .1468  | .1075  | .1214  | .1526  | .1238  | .1464 |       |
| 40.000  |        |        |        | .6950 | .4833 | .3654 | .2419 | .1958 | .1075  | .1214  | .1312  | .1526  | .1238  | .1464 |       |
| 55.000  |        |        |        | .6248 | .4009 | .3076 | .1421 | .1150 | .0534  |        |        |        |        |       |       |
| 70.000  |        |        |        | .5560 | .3369 | .2438 | .1481 | .1129 | .0822  | -.1239 | -.0785 | -.0956 | -.1761 |       |       |
| 90.000  |        | .6294  |        | .5172 | .3026 | .2081 | .1155 | .1117 | .1609  | -.1524 | -.1035 | -.1368 | -.2025 |       |       |
| 120.000 |        |        |        | .4264 | .2457 | .1472 | .1134 | .3953 | .1114  | -.1857 | -.3572 | -.4396 | -.2541 |       |       |
| 140.000 |        |        |        |       |       |       |       |       | .0150  |        |        |        |        |       |       |
| 150.000 |        |        |        | .3193 | .2381 | .1174 | .1250 | .7343 | -.2121 | -.4737 | -.3975 | -.2054 | -.0968 |       |       |
| 151.000 |        |        |        |       |       |       |       |       | .5918  |        |        |        |        |       |       |
| 162.000 |        |        |        |       |       |       |       |       | .6300  |        |        |        |        |       |       |
| 165.000 |        |        |        |       |       |       |       | .7998 | -.3211 | -.4356 | -.3215 | -.1963 | -.0631 |       |       |
| 169.000 |        |        |        |       |       |       |       |       |        |        |        |        |        |       |       |
| 174.000 |        |        |        |       |       |       |       |       |        |        |        |        |        |       |       |
| 180.000 | 1.3957 | .4600  | .2608  | .2357 | .1095 | .1234 | .7397 | .8138 | -.4430 | -.4701 | -.2785 | -.2087 | -.0508 |       |       |

X/LB

PHI

40.000

70.000

90.000

105.000

110.000

120.000

135.000

150.000

165.000

180.000

ALPHA ( 5 ) = 11.893 BETA ( 3 ) = 4.224 MACH = 1.3944 Q = 599.11 P = 440.18 RN/L = 2.9183

## SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230  | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|-------|--------|--------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|-------|
| PHI     | .000  | 1.3816 | 1.1361 | .6619 | .4819 | .3619 |       | .1792 | .1468  | .1266  | .1115  | .1477  | .1429  | .1378 |       |
| 20.000  |       |        |        | .6338 | .4445 | .3095 | .2039 | .1507 | .1216  |        |        |        |        |       |       |
| 40.000  |       |        |        | .5919 | .4052 | .2961 | .1817 | .1307 | .0498  | .0570  | .0731  | .1265  | .0969  | .1133 |       |
| 55.000  |       |        |        | .5017 | .2935 | .2058 | .0468 | .0349 | -.0125 |        |        |        |        |       |       |
| 70.000  |       |        |        | .4480 | .2311 | .1563 | .0706 | .0528 | .0146  | -.1682 | -.1273 | -.1545 | -.2400 |       |       |
| 90.000  |       | .4818  |        | .4236 | .2096 | .1305 | .0466 | .0596 | .0911  | -.1989 | -.1533 | -.1876 | -.2492 |       |       |
| 120.000 |       |        |        | .3636 | .1942 | .1035 | .0827 | .3473 | .0342  | -.2491 | -.3896 | -.3810 | -.1547 |       |       |

X/LB

PHI

20.000

40.000

55.000

70.000

90.000

120.000

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8808)

ALPHA ( 5 ) = 11.893 BETA ( 3 ) = 4.224

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 140.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       | .6526 |        |        |       |       |       |       |       |
| 151.000 |        |       |       |       |       |       |       |       | .4767  |        |       |       |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       | .5542  |        |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 169.000 |        |       |       |       |       |       |       | .7577 |        |        |       |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 180.000 | 1.3816 | .4336 | .2569 | .2518 | .1222 | .1081 | .6659 | .8183 |        |        |       |       |       |       |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |

PHI

| X/LB    | .0000  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 140.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 | 1.3816 | .4336 | .2569 | .2518 | .1222 | .1081 | .6659 | .8183 |       |       |       |       |       |       |

ALPHA ( 6 ) = 15.905 BETA ( 1 ) = -3.863 MACH = 1.3948 Q = 599.11 P = 438.94 RN/L = 2.9186

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 | 1.3816 | .4336 | .2569 | .2518 | .1222 | .1081 | .6659 | .8183 |       |       |       |       |       |       |       |

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TABULATED PRESSURE DATA - QAL148 ( AMES 11-073-1 )

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AMES 11-073(QAL148) - 140A/B/C/R ORB FUSELAGE

(XE8808)

ALPHA ( 6 ) = 15.935 BETA ( 1 ) = -3.863

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | 0.000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660 | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|-------|-------|-------|-------|-------|
| PHI     |        |        |        |        |        |        |        |       |        |        |       |       |       |       |       |
| 180.000 | 1.3146 | .3098  | .1469  | .1344  | .0428  | .0552  | .7233  |       |        |        |       |       |       |       |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |
| PHI     |        |        |        |        |        |        |        |       |        |        |       |       |       |       |       |
| 40.000  | .2704  | .2946  | .3196  | .2905  | .2342  | .1526  | .0639  |       |        |        |       |       |       |       |       |
| 70.000  | .3112  | .3571  | .3107  | .2140  | .1565  | .0137  |        |       |        |        |       |       |       |       |       |
| 90.000  | -.2644 | -.4435 | -.5301 | -.4772 | -.4547 | -.3944 | -.1705 |       |        |        |       |       |       |       |       |
| 105.000 | -.1518 | -.3188 | -.3863 | -.1988 | -.2705 | -.3045 | -.2473 |       |        |        |       |       |       |       |       |
| 110.000 |        |        | -.3065 | -.0499 | -.2891 | -.3674 | -.3695 |       |        |        |       |       |       |       |       |
| 120.000 | -.2251 | -.1972 | -.1201 | .0826  | -.1928 | -.2790 | -.2920 |       |        |        |       |       |       |       |       |
| 135.000 |        |        | -.0453 | .0252  | -.2105 | -.1893 | -.2240 |       |        |        |       |       |       |       |       |
| 150.000 | -.2915 | -.3305 | -.1973 | .1531  | -.3704 | -.2743 | -.3051 |       |        |        |       |       |       |       |       |
| 165.000 | -.1301 | -.2070 |        | .1533  | -.0679 | -.3752 |        |       |        |        |       |       |       |       |       |
| 180.000 | -.0829 | -.1101 | -.1154 | .3620  |        |        |        |       |        |        |       |       |       |       |       |

ALPHA ( 6 ) = 15.918 BETA ( 2 ) = .144 MACH = 1.3948 Q = 599.11 P = 439.94 RN/L = 2.9186

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | 0.000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|
| PHI     |        |        |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 20.000  | 1.3232 | 1.2521 | .8004 | .6037 | .4762 |       |       |       |        |        |       |       |       |       |       |
| 40.000  |        |        | .8026 | .5924 | .4425 | .3141 |       |       |        |        |       |       |       |       |       |
| 55.000  |        |        | .7636 | .5619 | .4387 | .3148 |       |       |        |        |       |       |       |       |       |
| 70.000  |        |        | .6263 | .4097 | .3031 | .1149 |       |       |        |        |       |       |       |       |       |
| 90.000  |        | .5638  | .5247 | .3245 | .2239 | .1382 |       |       |        |        |       |       |       |       |       |
| 120.000 |        |        | .4668 | .2696 | .1804 | .0871 |       |       |        |        |       |       |       |       |       |
| 140.000 |        |        | .3461 | .1668 | .0605 | .0524 |       |       |        |        |       |       |       |       |       |
| 150.000 |        |        | .2223 | .1399 | .0531 | .0626 |       |       |        |        |       |       |       |       |       |
| 162.000 |        |        |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 165.000 |        |        |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 174.000 |        |        |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 180.000 |        |        |       |       |       |       |       |       |        |        |       |       |       |       |       |
| X/LB    | 1.3232 | .2624  | .1550 | .1537 | .0488 | .0645 | .6411 |       |        |        |       |       |       |       |       |
|         | .6520  | .7290  | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |
| PHI     |        |        |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 40.000  | .2631  | .2961  | .3474 | .3017 | .2435 | .1611 | .0810 |       |        |        |       |       |       |       |       |
|         | .2873  |        | .3640 | .3256 | .2226 | .1594 | .0187 |       |        |        |       |       |       |       |       |

DATE 10 FEB 76 TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB808)

ALPHA ( 6 ) = 15.918 BETA ( 2 ) = .144

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP  
 X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI  
 70.000 -.3544 -.4876 -.5517 -.4743 -.5041 -.4304 -.2187  
 90.000 -.2160 -.3366 -.4115 -.2589 -.3731 -.3620 -.3054  
 105.000 -.2962 -.0905 -.4106 -.4471 -.4135  
 110.000  
 120.000 -.1235 -.1615 -.0930 -.0246 -.1930 -.2550 -.3346  
 135.000 .0022 -.0074 -.1195 -.1839 -.2366  
 150.000 -.1583 -.1785 -.1958 .2467 -.2774 -.2369 -.2758  
 165.000 -.0847 -.1076 .2324 -.0819 -.3713  
 180.000 -.0746 -.0663 -.0836 .4614

ALPHA ( 6 ) = 15.908 BETA ( 3 ) = 4.250 MACH = 1.3948 Q = 589.11 P = 439.94 RW/L = 2.9186

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI  
 .000 1.3166 1.2392 .7875 .5926 .4652 .2929 .2679 .2253 .1937 .2011 .1869 .2160 .2186 .2215  
 20.000 .7487 .5509 .4062 .3616 .2372 .2291 .2291 .1937 .0743 .0577 .1155 .1655 .1677 .1923  
 40.000 .6538 .4814 .3616 .2372 .2372 .1604 .1604 .0743 .0743 .0518 .1155 .1655 .1677 .1923  
 55.000 .4924 .2988 .1946 .0101 .0101 .0518 .0518 .0204 .0204 .1506 .1350 .1564 .2976  
 70.000 .4045 .2222 .1348 .0603 .0603 .0220 .0220 .0934 .0934 .1796 .1393 .1790 .2557  
 90.000 .3793 .1827 .1046 .0230 .0230 .0315 .0315 .0491 .0491 .2331 .3743 .4929 .2165  
 120.000 .2989 .1246 .0403 .0291 .0291 .2888 .2888 .0600 .0600 .2327 .3909 .1881 .0820  
 150.000 .2016 .1353 .0396 .0463 .0463 .5912 .5912 .4557 .4557 .4647 .2978 .1831 .0573  
 165.000 .1627 .0660 .0479 .5684 .5684 .7227 .7227 .5258 .5258 .4513 .3100 .2062 .0753  
 174.000 .1520 .1627 .0660 .0479 .0479 .5684 .5684 .7227 .7227 .4513 .3100 .2062 .0753  
 180.000 .1520 .1627 .0660 .0479 .0479 .5684 .5684 .7227 .7227 .4513 .3100 .2062 .0753

PHI  
 .000 .2569 .3047 .3320 .2940 .2252 .1537 .0623 .6606 .6649  
 40.000 .2548 .3594 .3104 .2079 .1487 .1487 .0134 .5483 .5147  
 70.000 .4098 .4552 .5105 .4430 .4828 .3806 .2391 .2391 .2391  
 90.000 .2298 .3599 .4132 .2733 .4032 .3796 .3484 .3484 .3484  
 105.000 .2614 .1822 .5151 .5361 .4966 .4617 .4617 .4617 .4617  
 120.000 .1039 .1376 .0518 .1924 .1811 .2860 .4035 .4035 .4035  
 135.000 .1821 .1821 .0449 .1857 .1857 .2650 .2650 .2650 .2650  
 150.000 .0894 .0939 .1212 .2269 .0284 .1352 .1352 .1352 .1352

DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -14JA/B/C/R ORB FUSELAGE

(XE88C9)

ALPHA ( 6 ) = 15.908 BETA ( 3 ) = 4.250

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

|         |        |        |        |       |       |        |        |       |        |        |
|---------|--------|--------|--------|-------|-------|--------|--------|-------|--------|--------|
| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790 | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
| PHI     |        |        |        |       |       |        |        |       |        |        |
| 165.000 | -.0675 |        | -.0895 |       | .2745 | -.0842 | -.3980 |       |        |        |
| 180.000 | -.0787 | -.1162 | -.1146 | .4217 |       |        |        |       |        |        |



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JAMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

**(60833X)**

$\rho = 599.62$      $P = 551.80$      $RN/L = 3.0276$

SECTION ( ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| SECTION (1) ORBITER FUSELAGE | DEPENDENT VARIABLE CP |      |      |      |
|------------------------------|-----------------------|------|------|------|
| 1                            | 1.770                 | 2040 | 3010 | 4970 |
| 2                            | 1.590                 | 2040 | 3010 | 4970 |
| 3                            | 1.320                 | 2040 | 3010 | 4970 |
| 4                            | 0.920                 | 2040 | 3010 | 4970 |
| 5                            | 0.570                 | 2040 | 3010 | 4970 |

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| Phi     | 1.4087 | .6269 | .1932 | .0513 | .0267  | .1933  | .0514  | .0268  | -.0110 | -.0642 | -.0801 | -.0277 | -.0606 |
|---------|--------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 20.000  |        |       | .2099 | .0593 | -.0078 | -.0330 | -.0271 | -.0428 |        |        |        |        |        |
| 40.000  |        |       | .4301 | .0848 | .0203  | -.0375 | -.0565 | -.1481 |        |        |        |        |        |
| 55.000  |        |       | .4734 | .1114 | .1512  | .0610  | .1266  | -.0273 | -.1440 | -.1262 | -.0910 | -.0967 | -.0623 |
| 70.000  |        |       | .5546 | .2944 | .2225  | .1700  | .1265  | .0077  | -.3426 | -.2109 | -.1229 | -.6052 |        |
| 90.000  | .7798  |       | .6205 | .3693 | .2215  | .2215  | .1560  | -.0905 | -.3276 | -.3205 | -.1310 | -.0120 |        |
| 120.000 |        |       | .7069 | .5168 | .3824  | .4414  | .3892  | -.0481 | -.2796 | -.4994 | -.1952 | -.0472 |        |
| 140.000 |        |       |       | .6118 | .4966  |        | .8541  | -.1720 | -.2882 | -.2511 | -.1571 | -.0651 |        |
| 150.000 |        |       | .7414 |       |        | .5694  |        |        |        |        |        |        |        |

5.0

[illegible]

**B7:K**

|      |       |       |       |       |       |       |       |        |        |
|------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| X:LB | .6520 | .7290 | .7790 | .9210 | .9790 | .9800 | .9990 | 1.0180 | 1.0460 |
|------|-------|-------|-------|-------|-------|-------|-------|--------|--------|

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[illegible]

165.0

[illegible]

SECTION : ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| SECTION (1) ORBITER FUSELAGE | DEPENDENT VARIABLE CP |       |       |         |       |
|------------------------------|-----------------------|-------|-------|---------|-------|
| 1.000                        | 0.270                 | 0.450 | 0.700 | 1.120   | 1.590 |
| 2.000                        | 0.200                 | 0.340 | 0.530 | 0.800   | 1.170 |
| 3.000                        | 0.150                 | 0.260 | 0.400 | 0.650   | 0.950 |
| 4.000                        | 0.100                 | 0.180 | 0.280 | 0.450   | 0.680 |
| 5.000                        | 0.050                 | 0.090 | 0.140 | 0.230   | 0.350 |
| 6.000                        | 0.020                 | 0.040 | 0.060 | 0.100   | 0.150 |
| 7.000                        | 0.010                 | 0.020 | 0.030 | 0.050   | 0.080 |
| 8.000                        | 0.005                 | 0.010 | 0.015 | 0.025   | 0.040 |
| 9.000                        | 0.002                 | 0.004 | 0.006 | 0.010   | 0.015 |
| 10.000                       | 0.001                 | 0.002 | 0.003 | 0.005   | 0.008 |
| 11.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 12.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 13.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 14.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 15.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 16.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 17.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 18.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 19.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 20.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 21.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 22.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 23.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 24.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 25.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 26.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 27.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 28.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 29.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 30.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 31.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 32.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 33.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 34.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 35.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 36.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 37.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 38.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 39.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 40.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 41.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 42.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 43.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 44.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 45.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 46.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 47.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 48.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 49.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 50.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 51.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 52.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 53.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 54.000                       | 0.000                 | 0.000 | 0.000 | 0.000   | 0.000 |
| 55.000                       | 0.000                 | 0.000 | 0.000 | 0.000</ |       |

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| PH      | 1.3957 | .6144 | .1913 | .0428 | .0254  | -.0427 | -.0423 | -.0174 | -.0183 | -.0607 | -.0744 | -.1073 | -.0730 |
|---------|--------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 20.000  |        |       | .1937 | .0430 | -.0125 | -.0427 | -.0221 | -.0308 |        |        |        |        | -.0488 |
| 40.000  |        |       | .2941 | .0539 | .0061  | -.0387 | -.0324 | -.0321 |        |        |        |        |        |
| 55.000  |        |       | .3859 | .1329 | .0786  | .0121  | .0159  | .0571  | -.1005 | -.1146 | -.0813 |        |        |
| 70.000  |        |       | .4522 | .1852 | .1257  | .0839  | .0658  | -.0535 | -.3924 | -.2546 | -.1446 | -.0249 |        |
| 90.000  |        |       | .5136 | .2530 | .1814  | .1167  | .0784  | -.1898 | -.4003 | -.3753 | -.1229 | -.0229 |        |
| 120.000 |        |       | .6087 | .4169 | .2692  | .3331  | .2754  | -.1639 | -.3517 | -.5607 | -.2667 | -.0646 |        |

ALPHA ( 1 ) = -4.025 BETA ( 2 ) = 4.235

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1660  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 140.000 |        |        | .6815  | .5849  | .4388  | .5051  |        | -.3278 | -.4015 | -.2046 | -.2294 | -.0946 |        |
| 150.000 |        |        |        |        |        |        | .1     | -.3369 |        |        |        |        |        |
| 151.000 |        |        |        |        |        |        |        | .4560  |        |        |        |        |        |
| 162.000 |        |        |        |        |        |        |        | .5629  |        |        |        |        |        |
| 165.000 |        |        |        |        |        |        |        |        | -.2868 | -.4238 | -.1703 | -.1863 | -.1025 |
| 169.000 |        |        |        |        |        |        | .9023  |        |        |        |        |        |        |
| 174.000 |        | .9764  | .7390  | .6158  | .5199  | .5995  | .9878  | -.3920 | -.3607 | -.1837 | -.1701 | -.1015 |        |
| 180.000 | 1.3357 | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |
| X/LB    |        |        |        |        |        |        |        |        |        |        |        |        |        |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 140.000 |        |        | -.0635 | -.1201 | -.2016 | -.2508 | -.3008 | .2387  | .3012  |        |        |        |        |
| 150.000 | -.0160 | -.0245 | -.0564 | -.1078 | -.2069 | -.2081 | -.3392 | .1413  | .1658  |        |        |        |        |
| 162.000 | -.0529 | -.0164 | .1354  | .2853  | .0763  | -.0471 | -.0816 |        |        |        |        |        |        |
| 170.000 | .0601  | .0399  | .2144  | .1908  | .0084  | -.0953 | -.0969 |        |        |        |        |        |        |
| 180.000 |        |        | .2973  | .1808  | -.0693 | -.1326 | -.1610 |        |        |        |        |        |        |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 140.000 |        |        | .3126  | .0461  | -.1533 | -.2406 | -.2729 | -.3128 |        |        |        |        |        |
| 150.000 | .0514  | .1178  | .4039  | .4164  | -.0529 | -.1221 | -.1593 | -.3148 |        |        |        |        |        |
| 162.000 | .0097  | .1278  | .4274  | .4395  | .0639  | -.0597 | -.1381 |        |        |        |        |        |        |
| 170.000 | .0004  | .4398  | .4398  | .4398  | .2759  | .0264  | -.3899 |        |        |        |        |        |        |
| 180.000 | .0009  | .1034  | .4516  | .5273  |        |        |        |        |        |        |        |        |        |

ALPHA ( 2 ) = .013 BETA ( 1 ) = -3.903 MACH = 1.2463 Q = 599.67 F = 551.57 RN/L = 3.0283

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |        |
| 140.000 |        |       | .2974 | .1953 | .0842 | .0096 |       | .0118 | .0116  | .0116  | .0188  | -.0184 | -.0299 | -.0675 | -.0647 |
| 150.000 | 1.4153 | .7581 | .3362 | .1731 | .0683 | .0096 |       | .0113 | -.0245 | -.0810 | -.0834 | -.0758 | -.0261 | -.0848 | -.0469 |
| 162.000 |        |       | .5095 | .2347 | .1353 | .0410 |       | .0118 | .0877  |        |        |        |        |        |        |
| 170.000 |        |       | .6270 | .3687 | .2765 | .1834 |       | .1651 | .0877  |        |        |        |        |        |        |
| 180.000 |        |       | .6915 | .4313 | .3193 | .2707 |       | .2266 | .1220  |        |        |        |        |        |        |
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |        |
| 140.000 |        |       | .7160 | .4726 | .3390 | .3180 |       | .2727 | .0688  |        |        |        |        |        |        |
| 150.000 | .8980  |       | .7327 | .5401 | .4016 | .4756 |       | .5029 | .0806  |        |        |        |        |        |        |
| 162.000 |        |       | .6825 | .5335 | .4023 | .5169 |       | .8997 | .0226  |        |        |        |        |        |        |
| 170.000 |        |       |       |       |       |       |       |       | -.2343 |        |        |        |        |        |        |
| 180.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |        |
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |        |
| 140.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |        |
| 150.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |        |
| 162.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |        |
| 170.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |        |
| 180.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |        |

1.0018

.9436

-.3257

-.4047

-.3065

-.1904

-.0913

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8809)

ALPHA ( 2 ) = .013 BETA ( 1 ) = -3.903

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1860 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 180.000 | 1.4153 | .8815 | .6088 | .4978 | .3973 | .5121 |       | .8682 |        | -.4289 | -.4375 | -.2497 | -.2135 | -.0853 |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9800 | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |

| PHI     | .000   | .0137  | .0090  | .0061  | -.0501 | -.1193 | -.1800 | -.1541 | .2910 | .3315 | .2314 |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|--|--|--|--|
| 40.000  | -.0219 | -.0169 | -.0477 | -.1382 | -.1075 | -.2994 | -.0302 | -.0232 |       |       |       |  |  |  |  |
| 70.000  | .0035  | -.1039 | .1770  | .1648  | .0692  | -.0232 | -.0830 |        |       |       |       |  |  |  |  |
| 90.000  | .0261  | -.0433 | -.0587 | .1489  | .0457  | -.0496 | -.0830 |        |       |       |       |  |  |  |  |
| 105.000 |        | .1571  | .1809  | -.0250 | -.1240 | -.1633 |        |        |       |       |       |  |  |  |  |
| 110.000 |        |        |        |        |        |        | -.2441 |        |       |       |       |  |  |  |  |
| 120.000 | -.0067 | -.0163 | .3268  | .2226  | -.0487 | -.1224 | -.1313 |        |       |       |       |  |  |  |  |
| 135.000 |        |        | .3809  | .3841  | -.0271 | -.0367 | -.0484 |        |       |       |       |  |  |  |  |
| 150.000 | .0030  | .0372  | .3705  | .3689  | .0510  | .0652  | -.0154 |        |       |       |       |  |  |  |  |
| 165.000 | -.0003 |        | .3691  | .3650  | .1616  | -.3497 |        |        |       |       |       |  |  |  |  |
| 180.000 | -.0026 | .0906  | .3500  | .4117  |        |        |        |        |       |       |       |  |  |  |  |

ALPHA ( 2 ) = .017 BETA ( 2 ) = .152 MACH = 1.2463 Q = 599.67 P = 551.57 RN/L = 3.0283

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |       |        |        |        |        |        |        |        |        |        |        |        |        |
| 20.000  | 1.4191 | .7575 | .2974 | .1462  | .1109  |        |        | .0161  |        | .0308  | .0270  | -.0110 | -.0356 | -.0623 | -.0573 |
| 40.000  |        |       | .3192 | .1492  | .0722  | .0180  |        | .0240  |        | .0035  |        |        |        |        |        |
| 55.000  |        |       | .4413 | .1935  | .1119  | .0360  |        | .0401  |        | -.0358 | -.0494 | -.0563 | -.0354 | -.0739 | -.0380 |
| 70.000  |        |       | .5266 | .2758  | .2035  | .1080  |        | .1244  |        | .0497  |        |        |        |        |        |
| 90.000  |        | .7549 | .5678 | .3186  | .2220  | .1722  | .1698  | .0593  |        | .0593  | -.3136 | -.1829 | -.1444 | -.0468 |        |
| 120.000 |        |       | .6052 | .3630  | .2320  | .2185  | .2000  | -.0231 |        | -.0231 | -.3064 | -.2733 | -.1677 | -.0477 |        |
| 140.000 |        |       | .6440 | .4560  | .3095  | .3993  | .4137  | -.0286 |        | -.0286 | -.2784 | -.4861 | -.1655 | -.0716 |        |
| 150.000 |        |       | .6389 | .5081  | .3697  | .4898  | .8209  | -.1172 |        | -.3260 | -.4695 | -.3209 | -.1877 | -.0618 |        |
| 162.000 |        |       |       |        |        |        |        | .5465  |        |        |        |        |        |        |        |
| 165.000 |        |       |       |        |        |        |        | .6154  |        |        |        |        |        |        |        |
| 169.000 |        |       |       |        |        |        |        |        | .9152  |        |        |        |        |        |        |
| 180.000 | 1.4191 | .8660 | .6210 | .5029  | .4075  | .5228  | .9957  |        |        | -.3327 | -.4007 | -.2481 | -.2065 | -.0592 |        |
| X/LB    | .6520  | .7290 | .7790 | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |        |
| PHI     |        |       |       |        |        |        |        |        |        |        |        |        |        |        |        |
| 40.000  | .0104  | .0183 | .0116 | -.0438 | -.1228 | -.1798 | -.1774 | .2829  |        |        |        |        |        |        |        |
| 180.000 | -.0029 |       | .0050 | -.0351 | -.1353 | -.1272 | -.2749 | .2009  |        |        |        |        |        |        |        |

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 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB09)

ALPHA ( 2 ) = .017 BETA ( 2 ) = .152

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0480 |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |       |        |        |        |        |        |        |
| 70.000  | -.0110 | -.1156 | -.1252 | .1566 | .0135  | -.0791 | -.0819 |        |        |        |
| 90.000  | .0161  | -.0494 | .0681  | .1263 | -.0222 | -.0902 | -.1248 |        |        |        |
| 105.000 |        |        | .2007  | .1123 | -.1014 | -.1670 | -.1963 | -.3049 |        |        |
| 110.000 |        |        |        |       |        |        |        | -.3023 |        |        |
| 120.000 | .0304  | .0259  | .2854  | .1751 | -.0832 | -.1846 | -.2310 |        |        |        |
| 135.000 |        |        | .3218  | .3655 | -.0028 | -.0992 | -.1315 |        |        |        |
| 150.000 | .0202  | .0712  | .3347  | .3894 | .0626  | -.0203 | -.1069 |        |        |        |
| 165.000 | .0168  |        | .3593  | .2832 | .0512  | -.3843 |        |        |        |        |
| 180.000 | .0086  | .0670  | .3640  | .5013 |        |        |        |        |        |        |

RV/L = 3.0283

P = 551.57

Q = 599.67

MACH = 1.2463

ALPHA ( 2 ) = .013 BETA ( 3 ) = .4217

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .5700 | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |        |       |        |        |        |        |        |        |        |       |
| 20.000  | 1.4069 | .7474 | .2970 | .1527 | .1112 | -.0063 |       | -.0024 | .0119  | .0166  | -.0088 | -.0304 | -.0687 | -.0685 |       |
| 40.000  |        |       | .2951 | .1366 | .0743 | -.0063 |       | -.0001 | .0068  | -.0217 | -.0499 | -.0411 | -.0849 | -.0417 |       |
| 60.000  |        |       | .3734 | .1518 | .0966 | .0082  |       | .0417  | .0114  | .0068  | -.2300 | -.1781 | -.0546 |        |       |
| 80.000  |        |       | .4323 | .1915 | .1385 | .0465  |       | .0878  | .0068  | -.3599 | -.3345 | -.1739 | -.0501 |        |       |
| 100.000 |        |       | .4654 | .2134 | .1385 | .0795  |       | .1127  | -.1068 | -.3707 | -.5396 | -.1780 | -.0623 |        |       |
| 120.000 | .6056  |       | .5049 | .2515 | .1368 | .1163  |       | .1320  | -.1343 | -.3645 | -.4455 | -.2748 | -.2350 | -.0709 |       |
| 140.000 |        |       | .5571 | .3678 | .2139 | .3139  |       | .3063  | -.3185 | -.4455 | -.4455 | -.2748 | -.2350 | -.0709 |       |
| 160.000 |        |       | .5853 | .4688 | .3245 | .4321  |       | .7432  | .4447  | -.3427 | -.4819 | -.2338 | -.2319 | -.0735 |       |
| 180.000 |        |       |       |       |       |        |       |        | .5362  |        |        |        |        |        |       |
| PHI     |        |       |       |       |       |        |       |        |        |        |        |        |        |        |       |
| 20.000  | 1.4069 | .8466 | .6184 | .5043 | .3828 | .5015  |       | .8672  | -.4457 | -.4233 | -.2457 | -.2112 | -.0842 |        |       |
| 40.000  |        |       | .6184 | .5043 | .3828 | .5015  |       | .8672  | -.4457 | -.4233 | -.2457 | -.2112 | -.0842 |        |       |
| 60.000  |        |       | .7790 | .8210 | .8790 | .9210  | .9600 | .9990  | 1.0180 | 1.0480 |        |        |        |        |       |
| 80.000  |        |       |       |       |       |        |       |        |        |        |        |        |        |        |       |
| 100.000 |        |       |       |       |       |        |       |        |        |        |        |        |        |        |       |
| 120.000 |        |       |       |       |       |        |       |        |        |        |        |        |        |        |       |
| 140.000 |        |       |       |       |       |        |       |        |        |        |        |        |        |        |       |
| 160.000 |        |       |       |       |       |        |       |        |        |        |        |        |        |        |       |
| 180.000 |        |       |       |       |       |        |       |        |        |        |        |        |        |        |       |

-3471

-3519

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(XZ3809)

ALPHA ( 2 ) = .013 BETA ( 3 ) = 4.217

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| PHI     |        |       |       |       |       |       |        |        |        |        |
| 165.000 | -.0005 |       | .3453 |       |       |       |        |        |        |        |
| 180.000 | -.0066 | .0862 | .3493 | .3862 |       | .2131 | -.0165 | -.3995 |        |        |

ALPHA ( 3 ) = 3.907 BETA ( 1 ) = -3.907 MACH = 1.2463 Q = 599.67 P = 551.57 RN/L = 3.0276

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| 20.000  | 1.4033 | .8829 | .4142 | .2657 | .1620 |       |       | .0477 |       | .0454  | .0590  | .0315  | .0229  | -.0197 | -.0219 |
| 40.000  |        |       | .4583 | .2812 | .1566 | .0914 |       | .0598 |       | .0231  | .0286  | .0036  | .0412  | -.0239 | -.0060 |
| 55.000  |        |       | .6028 | .3435 | .2205 | .1292 |       | .1025 |       | .1455  |        |        |        |        |        |
| 70.000  |        |       | .6727 | .4341 | .3221 | .2179 |       | .2131 |       |        |        |        |        |        |        |
| 90.000  |        | .8578 | .6861 | .4453 | .3230 | .2483 |       | .2449 |       | .1639  | -.2294 | -.0865 | -.0791 | -.1117 |        |
| 120.000 |        |       | .6880 | .4590 | .3230 | .2858 |       | .2905 |       | .1196  | -.2253 | -.1400 | -.1353 | -.1060 |        |
| 140.000 |        |       | .6526 | .4671 | .3173 | .3924 |       | .5032 |       | .0921  | -.2044 | -.4121 | -.2806 | -.1795 |        |
| 150.000 |        |       |       |       |       |       |       |       |       | .0181  |        |        |        |        |        |
| 162.000 |        |       | .5662 | .4317 | .2624 | .4094 |       | .8780 |       | -.2454 | -.5170 | -.4000 | -.2004 | -.1081 |        |
| 165.000 |        |       |       |       |       |       |       |       | .6112 |        |        |        |        |        |        |
| 169.000 |        |       |       |       |       |       |       |       | .6468 |        |        |        |        |        |        |
| 174.000 |        |       |       |       |       |       |       |       |       | -.3786 | -.4734 | -.3853 | -.2140 | -.0877 |        |
| 180.000 | 1.4033 | .7450 | .4867 | .4001 | .2728 | .4106 | .9509 | .9082 |       |        |        |        |        |        |        |

X/LB

PHI

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| 40.000  | -.0353 | -.0650 | .0828  | .0304  | -.0431 | -.1060 | -.0782 |        |        |        |
| 70.000  | -.0479 |        | .0638  | .0352  | -.0608 | -.0426 | -.2117 |        |        |        |
| 90.000  | -.0682 | -.1695 | -.2568 | -.0279 | -.0123 | -.0970 | -.0620 |        |        |        |
| 105.000 | -.0362 | -.1428 | -.2019 | .0542  | -.0315 | -.1170 | -.1619 |        |        |        |
| 110.000 |        |        | -.0011 | .1064  | -.1492 | -.1836 | -.2322 |        |        |        |
| 120.000 | -.0462 | -.0957 | .2263  | .1433  | -.0911 | -.2258 | -.1938 | -.2786 |        |        |
| 135.000 |        |        | .2617  | .2556  | -.0872 | -.1326 | -.1385 | -.2996 |        |        |
| 150.000 | -.0207 | .0470  | .2594  | .2633  | -.0462 | .0001  | -.0956 |        |        |        |
| 165.000 | -.0165 |        | .2693  |        | .2614  | .1127  | -.2491 |        |        |        |
| 180.000 | -.0068 | .0938  | .2528  | .3212  |        |        |        |        |        |        |

.3922 .4154

.3235 .3045





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TABULATED PRESSURE DATA - CA148 ( AMES 11-073-1 )

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ALPHA ( 4 ) = 7.933 BETA ( 1 ) = -3.903

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(XEB809)

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4870  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 180.000 | 1.3745 | .6057 | .3658 | .3176 | .1614 | .2349 |       | .7218 |        | -.5236 | -.5168 | -.3284 | -.2329 | -.0698 |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |

| PHI     | .000   | .1283  | .1654  | .1258  | .0438  | -.0280 | -.0410 |        | .5003 | .4829 |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--|--|--|--|--|
| 40.000  | .1276  | .1709  | .1313  | .0241  | .0083  | -.1485 |        |        | .3974 | .3601 |  |  |  |  |  |
| 70.000  | -.1433 | -.2619 | -.3255 | -.0914 | -.1289 | -.0509 |        |        |       |       |  |  |  |  |  |
| 90.000  | -.0986 | -.2092 | -.2857 | -.0268 | -.1648 | -.1380 |        |        |       |       |  |  |  |  |  |
| 105.000 |        | -.0756 |        | .0307  | -.2201 | -.3032 | -.2160 |        |       |       |  |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        | -.2786 |       |       |  |  |  |  |  |
| 120.000 | -.1715 | -.1658 | .1024  | .0686  | -.1174 | -.2499 | -.2933 | -.2721 |       |       |  |  |  |  |  |
| 135.000 |        |        | .0838  | .1576  | -.0907 | -.1587 | -.1831 |        |       |       |  |  |  |  |  |
| 150.000 | -.0782 | -.0346 | .0800  | .1966  | .0169  | -.0483 | -.1604 |        |       |       |  |  |  |  |  |
| 165.000 |        |        | .1119  | .2422  | .0683  | -.3894 |        |        |       |       |  |  |  |  |  |
| 180.000 | -.0367 | -.0069 | .1753  | .4303  |        |        |        |        |       |       |  |  |  |  |  |

ALPHA ( 4 ) = 7.889 BETA ( 2 ) = .143 MACH = 1.2463 Q = 599.67 P = 551.57 RN/L = 3.0282

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4870  | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 180.000 | 1.3779 | 1.0085 | .5413 | .3811 | .2777 |       |       | .1102 | .0971  | .0943  | .0848  | .0471  | .0455  |        |       |
| 20.000  |        |        | .5564 | .3739 | .2394 | .1396 |       | .1092 | .0873  | .0873  | .0819  | .0328  | .0450  |        |       |
| 40.000  |        |        | .6132 | .3949 | .2753 | .1953 |       | .1458 | .1007  | .1056  | .0702  |        |        |        |       |
| 55.000  |        |        | .5979 | .3761 | .2746 | .1525 |       | .1584 | .1249  |        |        |        |        |        |       |
| 70.000  |        |        | .5665 | .3456 | .2360 | .1468 |       | .1928 | .1374  | -.2269 | -.1407 | -.1348 | -.2069 |        |       |
| 90.000  | .6734  |        | .5490 | .3399 | .2141 | .1451 |       | .2363 | .0950  | -.2588 | -.1776 | -.1917 | -.1826 |        |       |
| 120.000 |        |        | .5003 | .3330 | .1901 | .1993 |       | .4382 | .0204  | -.2780 | -.4586 | -.3741 | -.1835 |        |       |
| 140.000 |        |        | .4258 | .3375 | .1455 | .2185 |       | .7670 | -.0813 | -.3374 | -.5672 | -.4317 | -.2019 | -.0770 |       |
| 151.000 |        |        |       |       |       |       |       |       | .5230  |        |        |        |        |        |       |
| 161.000 |        |        |       |       |       |       |       |       | .5674  |        |        |        |        |        |       |
| 172.000 |        |        |       |       |       |       |       |       |        | -.4204 | -.4919 | -.3405 | -.2134 | -.0563 |       |
| 189.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 174.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 182.00  | 1.3779 | .5919  | .3824 | .3065 | .1689 | .2434 | .8617 | .9192 | -.5576 | -.5653 | -.3074 | -.2262 | -.0498 |        |       |
| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |

| PHI    | .000  | .1418 | .1822 | .1300 | .0482 | -.0261 | -.0355 |  | .4977 | .4857 |  |  |  |  |  |
|--------|-------|-------|-------|-------|-------|--------|--------|--|-------|-------|--|--|--|--|--|
| 40.000 | .1116 | .1977 | .1422 | .1422 | .0268 | -.0006 | -.1432 |  | .3964 | .3479 |  |  |  |  |  |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEBB09)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 7.889 BETA ( 2 ) = 143

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| 70.000  | -.1435 | -.2560 | -.3240 | -.1144 | -.1230 | -.1943 | -.1276 |        |        |        |
| 90.000  | -.0867 | -.2027 | -.2730 | -.0160 | -.2305 | -.2057 | -.2382 |        |        |        |
| 105.000 |        |        | -.0405 | .0487  | -.2998 | -.3271 | -.2942 |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.3884 |        |        |
| 120.000 | -.0718 | -.0961 | .1036  | .0321  | -.1620 | -.2918 | -.3709 | -.3627 |        |        |
| 135.000 |        |        | .1102  | .1102  | -.0822 | -.2005 | -.2529 |        |        |        |
| 150.000 | -.0254 | -.0406 | .1491  | .4332  | -.0242 | -.1266 | -.2025 |        |        |        |
| 165.000 | -.0185 |        | .1817  |        | .1704  | -.0634 | -.3936 |        |        |        |
| 180.000 | -.0160 | -.0114 | .2016  | .5297  |        |        |        |        |        |        |

ALPHA ( 4 ) = 7.857 BETA ( 3 ) = 4.208 MACH = 1.2463 Q = 599.67 P = 551.57 RN/L = 3.0282

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 20.000  | 1.3661 | .9950 | .5345 | .3820 | .2710 |       |       | .0940 |        | .0830  | .0909  | .0824  | .0907  | .0443  | .0382 |
| 40.000  |        |       | .5167 | .3482 | .2186 | .1172 |       | .0784 |        | .0843  |        |        |        |        |       |
| 55.000  |        |       | .5208 | .3313 | .2272 | .1226 |       | .0919 |        | .0523  | .0784  | .0538  | .0543  | .0017  | .0239 |
| 70.000  |        |       | .4858 | .2756 | .1936 | .0631 |       | .0674 |        | .0895  |        |        |        |        |       |
| 90.000  |        | .5234 | .4578 | .2417 | .1560 | .0629 | .1226 | .0971 |        | .0871  | -.2640 | -.1907 | -.1915 | -.2136 |       |
| 120.000 |        |       | .4532 | .2403 | .1393 | .0605 | .1779 | .1779 |        | .0278  | -.3048 | -.2307 | -.2398 | -.1676 |       |
| 140.000 |        |       | .4292 | .2672 | .1339 | .1321 | .3593 | .3593 |        | -.0619 | -.3405 | -.5020 | -.2319 | -.1063 |       |
| 150.000 |        |       | .3925 | .3120 | .1112 | .1775 | .7001 | .7001 |        | -.1658 | -.5680 | -.3686 | -.1974 | -.0541 |       |
| 162.000 |        |       |       |       |       |       |       |       | .4344  |        |        |        |        |        |       |
| 165.000 |        |       |       |       |       |       |       |       | .4969  |        |        |        |        |        |       |
| 174.000 |        |       |       |       |       |       |       | .8035 |        | -.4285 | -.5436 | -.3136 | -.2317 | -.0520 |       |
| 180.000 | 1.3661 | .5700 | .3849 | .3358 | .1641 | .2096 | .8361 | .6208 |        | -.5388 | -.5068 | -.3210 | -.2388 | -.0668 |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |

PHI

|         |        |        |        |        |        |        |        |        |       |       |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--|--|--|--|--|
| 40.000  | .0767  | .1440  | .1770  | .1268  | .0453  | -.0338 | -.0374 |        |       |       |  |  |  |  |  |
| 70.000  | .0957  | .2018  | .2018  | .1436  | .0266  | -.0138 | -.1465 |        | .4818 | .4920 |  |  |  |  |  |
| 90.000  | -.1198 | -.2907 | -.3220 | -.1070 | -.1529 | -.2524 | -.1937 |        | .3785 | .3394 |  |  |  |  |  |
| 105.000 | -.0632 | -.1697 | -.1439 | -.0446 | -.2323 | -.1972 | -.2890 |        |       |       |  |  |  |  |  |
| 110.000 |        |        | .0216  | -.0199 | -.3651 | -.3202 | -.3290 |        |       |       |  |  |  |  |  |
| 120.000 | -.0155 | -.0693 | .0798  | -.0905 | -.2157 | -.3583 | -.4682 | -.4424 |       |       |  |  |  |  |  |
| 135.000 |        |        | .1889  | .2318  | -.1529 | -.2467 | -.2960 | -.3777 |       |       |  |  |  |  |  |
| 150.000 | -.0144 | -.0090 | .2256  | .3379  | -.0946 | -.2050 | -.2705 |        |       |       |  |  |  |  |  |

DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AVES 11-073-1 )  
 AVES 11-073(0A148) -140A/B/C/R ORS FUSELAGE  
 ALPHA ( 4 ) = 7.857 BETA ( 3 ) = 4.202

(XE8809)

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SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| PHI     |        |       |       |       |       |       |       |       |        |        |
| 165.000 | -.0249 |       |       |       |       |       |       |       |        |        |
| 180.000 | -.0415 | .0019 | .1809 |       |       |       |       |       |        |        |

| ALPHA ( 5 ) = 11.893 | BETA ( 1 ) = -3.885 | MACH = 1.2447 | Q = 599.41 | P = 552.74 | RN/L = 3.0278 |
|----------------------|---------------------|---------------|------------|------------|---------------|
|                      |                     |               |            |            |               |

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4870 | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 20.000  | 1.3181 | 1.1096 | .6606 | .4789 | .3583 | .2312 | .1810 | .1560 | .1592 | .1508 | .1364 | .1212 | .1604 | .1197 | .1320 |
| 40.000  |        |        | .7054 | .4989 | .3487 | .2312 | .1960 |       | .1592 | .1508 | .1364 | .1212 | .1604 | .1197 | .1320 |
| 55.000  |        |        | .7759 | .5408 | .4080 | .2966 | .1946 |       | .1606 | .1606 | .1694 | .1538 | .1762 | .1245 | .1532 |
| 70.000  |        |        | .7310 | .5053 | .3816 | .2499 | .1879 |       | .1731 | .1731 | .1694 | .1538 | .1762 | .1245 | .1532 |
| 90.000  |        | .7439  | .6591 | .4439 | .3102 | .2340 | .1879 |       | .2021 | .2021 | .1284 | .0554 | .0640 | .1349 |       |
| 120.000 |        |        | .5992 | .3982 | .2724 | .1934 | .2326 |       | .1925 | .1775 | .0806 | .0806 | .1263 | .2014 |       |
| 140.000 |        |        | .4703 | .2914 | .1715 | .1680 | .4607 |       | .1177 | .2101 | .3684 | .5652 | .4554 |       |       |
| 150.000 |        |        | .3289 | .2236 | .1084 | .1345 | .8368 |       | .5773 | .1162 | .6031 | .5409 | .2824 | .1618 |       |
| 151.000 |        |        |       |       |       |       |       |       | .5971 |       |       |       |       |       |       |
| 162.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |

| X/LB    | .1822 | .2561 | .2868 | .2073 | .1181 | .0874 | .1219 | .7788 | .8461 | .7599 | .9990 | 1.0180 | 1.0460 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |        |        |
| 40.000  | .1822 | .2561 | .2868 | .2073 | .1181 | .0874 | .1219 | .7788 | .8461 | .7599 | .9990 | 1.0180 | 1.0460 |
| 70.000  | .2152 | .3139 | .3139 | .2234 | .0872 | .0596 | .0274 | .0021 |       |       |       |        |        |
| 90.000  | .2585 | .3878 | .4168 | .2160 | .1143 | .0596 | .0274 | .0021 |       |       |       |        |        |
| 105.000 | .1708 | .2925 | .3683 | .0399 | .2182 | .1372 | .1189 | .1091 |       |       |       |        |        |
| 110.000 |       |       | .3014 | .0008 | .2619 | .1218 | .1898 | .1898 |       |       |       |        |        |
| 120.000 | .1963 | .2143 | .0205 | .0449 | .1771 | .2657 | .2347 |       |       |       |       |        |        |
| 135.000 |       |       | .0108 | .1615 | .1477 | .2554 |       |       |       |       |       |        |        |
| 150.000 | .1128 | .2152 | .0586 | .3111 | .0786 | .1849 | .2068 |       |       |       |       |        |        |
| 165.000 | .0759 | .0379 | .0379 | .1681 | .1681 | .2587 |       |       |       |       |       |        |        |
| 180.000 | .0548 | .0610 | .0627 | .4824 | .1666 | .0306 | .4164 |       |       |       |       |        |        |

DATE 10 FEB 76

## TABULATED PRESSURE DATA - OA148 (AVES 11-073-1)

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AVES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

(XEB809)

ALPHA (5) = 11.849 BETA (2) = .145 MACH = 1.2447 Q = 599.41 P = 532.74 RV/L = 3.0279

## SECTION (1) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | PHI    | .0007  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|
| 20.000  | 1.3250 | 1.1190 | .6647 | .4868 | .3716 | .2183 | .2014 | .1908 | .1714 | .1324  | .1462  | .1579 | .1225 | .1352 |       |       |
| 40.000  |        |        | .6762 | .4814 | .3403 | .2393 | .1908 | .1519 | .1217 | .1508  | .1275  | .1441 | .1044 | .1331 |       |       |
| 55.000  |        |        | .6891 | .4772 | .3590 | .2513 | .1130 | .1224 | .1164 | .1792  | .1286  | .1284 | .2266 |       |       |       |
| 70.000  |        |        | .6127 | .3936 | .2913 | .1521 | .1938 | .1372 | .1372 | .2295  | .1507  | .1840 | .2570 |       |       |       |
| 90.000  |        | .6118  | .5450 | .3367 | .2281 | .1158 | .4232 | .0482 | .0482 | .2782  | .4377  | .5571 | .2354 |       |       |       |
| 120.000 |        |        | .5012 | .3075 | .1886 | .1305 | .7446 | .5169 | .5169 | .5988  | .4784  | .2232 | .0974 |       |       |       |
| 140.000 |        |        | .4100 | .2495 | .1361 | .1293 | .7805 | .5478 | .5478 | .5229  | .3640  | .2025 | .0599 |       |       |       |
| 150.000 |        |        | .3168 | .2533 | .0855 | .1296 | .7755 | .7824 | .7805 | .5765  | .5862  | .3250 | .1983 | .0463 |       |       |
| 162.000 |        |        |       |       |       |       | .9990 | .9600 | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |
| 169.000 |        |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 174.000 |        |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 180.000 |        |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |

X/LB

PHI

|         |        |       |       |       |       |       |       |       |       |       |       |       |       |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 20.000  | 1.3250 | .4425 | .2644 | .2355 | .0924 | .1296 | .7824 | .7805 | .5765 | .5862 | .3250 | .1983 | .0463 |
| 40.000  | .1825  | .3014 | .2933 | .2153 | .1229 | .0319 | .0198 | .0989 | .0509 | .0994 | .2499 | .1051 |       |
| 55.000  | .2388  | .3819 | .4264 | .2083 | .0969 | .0509 | .0198 | .2499 | .1051 | .0994 | .2499 | .1051 |       |
| 70.000  | .1449  | .2609 | .3507 | .1056 | .2969 | .2415 | .2771 | .2969 | .2415 | .2771 | .2969 | .2415 |       |
| 90.000  | .0927  | .1363 | .0127 | .0262 | .2045 | .3075 | .3892 | .3892 | .3892 | .3892 | .3892 | .3892 |       |
| 110.000 |        |       | .0357 | .1443 | .1428 | .2315 | .2912 | .2912 | .2912 | .2912 | .2912 | .2912 |       |
| 120.000 | .0646  | .0964 | .0054 | .4190 | .0720 | .1720 | .2317 | .2317 | .2317 | .2317 | .2317 | .2317 |       |
| 135.000 | .0437  | .0281 | .0281 | .1582 | .1582 | .1051 | .4182 | .4182 | .4182 | .4182 | .4182 | .4182 |       |
| 150.000 | .0370  | .0309 | .0507 | .5450 |       |       |       |       |       |       |       |       |       |

X/LB

PHI

ALPHA (5) = 11.848 BETA (3) = .4220 MACH = 1.2447 Q = 599.41 P = 532.74 RV/L = 3.0279

## SECTION (1) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | PHI    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 20.000  | 1.3107 | 1.1024 | .6536 | .4832 | .3525 | .1895 | .1784 | .1517 | .1490 | .1322 | .1351 | .1622 | .1151 | .1209 |       |       |
| 40.000  |        |        | .6248 | .4380 | .3023 | .1895 | .1517 | .1272 | .1181 | .0982 | .0991 | .1087 | .0639 | .1043 |       |       |
| 55.000  |        |        | .5800 | .3958 | .2906 | .1655 | .1272 | .0246 | .0457 | .0982 | .0991 | .1087 | .0639 | .1043 |       |       |
| 70.000  |        |        | .4817 | .2747 | .1866 | .0353 | .0569 | .0569 | .1058 | .2159 | .1807 | .2054 | .3096 |       |       |       |
| 90.000  |        | .4563  | .4251 | .2211 | .1331 | .0640 | .1529 | .1529 | .0723 | .2761 | .2052 | .2435 | .2540 |       |       |       |
| 120.000 |        |        | .3450 | .2002 | .1157 | .0393 | .3669 | .3669 | .0307 | .3345 | .4803 | .3560 | .1550 |       |       |       |

X/LB

PHI



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 1'-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB10) ( 05 AUG 75 )

## REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. X0  
 LREF = 474.8000 IN. YMRP = .0000 IN. Y0  
 BREF = 956.0680 IN. ZMRP = 375.0000 IN. Z0  
 SCALE = .0300

## PARAMETRIC DATA

RUDER = .000 SPDRK = 85.000  
 BOFLAP = 22.500 L-ELVN = .000  
 R-ELVN = .000 MACH = 1.100

ALPHA ( 1 ) = -4.037 BETA ( 1 ) = -3.883 MACH = 1.0977 Q = 598.52 P = 709.53 RN/L = 3.1914

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | 0.000  | 0.080  | 0.230  | 0.460  | 0.700  | 1.120  | 1.580  | 1.660  | 1.770  | 2.040  | 2.510  | 3.010  | 3.780  | 4.970  | 5.740  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     | 1.3160 | .5487  | .1266  | .0632  | .0226  | -.0541 | -.0817 | -.0750 | -.0694 | -.0594 | -.0968 | -.1518 | -.1392 | -.1096 | -.0316 |
| 20.000  |        | .1578  | .0459  | .0459  | -.0391 | -.0817 | -.0817 | -.0750 | -.0694 | -.0594 | -.0968 | -.1518 | -.1392 | -.1096 | -.0316 |
| 40.000  |        | .3448  | .0816  | .0816  | -.0162 | -.0817 | -.0817 | -.1684 | -.2594 | -.2594 | -.2495 | -.2103 | -.1645 | -.1588 | -.0586 |
| 55.000  |        | .5128  | .2673  | .2673  | .1821  | .0867  | .1152  | .0132  | -.0704 | -.0704 | -.4128 | -.1810 | -.0944 | -.0166 |        |
| 70.000  |        | .6242  | .3837  | .2985  | .2985  | .2918  | .1152  | .1152  | -.0872 | -.0872 | -.3677 | -.3339 | -.1070 | -.0174 |        |
| 90.000  | .8807  | .7021  | .4695  | .3649  | .3649  | .2918  | .1499  | .1499  | -.0269 | -.0269 | -.3004 | -.5541 | -.1189 | -.0444 |        |
| 120.000 |        | .7812  | .6025  | .4871  | .4871  | .4886  | .3961  | .3961  | -.0351 | -.0351 | -.3007 | -.5296 | -.3408 | -.1771 | -.0517 |
| 140.000 |        | .7793  | .6421  | .5492  | .5492  | .5754  | .8299  | .8299  | .5433  | .5433  |        |        |        |        |        |
| 150.000 |        |        |        |        |        |        |        |        | .6001  | .6001  |        |        |        |        |        |
| 162.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 165.000 |        |        |        |        |        |        | .9783  | .8865  |        |        |        |        |        |        |        |
| 169.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 174.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 180.000 | 1.3160 | .9742  | .7242  | .6130  | .5390  | .5728  | .9783  | .8183  |        |        |        |        |        |        |        |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |        |
| PHI     | .0601  | -.0326 | -.0783 | -.1951 | -.2462 | -.2933 | -.1682 |        | .3320  | .3261  |        |        |        |        |        |
| 40.000  |        | -.0414 | -.0867 | -.1479 | -.2613 | -.2587 | -.2265 |        | .1421  | .1741  |        |        |        |        |        |
| 70.000  | .1337  | .0606  | .2556  | .3464  | .0726  | -.0175 | -.0292 |        |        |        |        |        |        |        |        |
| 90.000  | .1553  | .1201  | .3100  | .3607  | .0440  | -.0792 | -.0554 |        |        |        |        |        |        |        |        |
| 105.000 |        |        | .3721  | .3740  | -.0505 | -.1301 | -.0793 |        |        |        |        |        |        |        |        |
| 110.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 120.000 | .1555  | .2189  | .4737  | .4292  | -.1085 | -.0886 | -.1250 |        |        |        |        |        |        |        |        |
| 135.000 |        |        | .5262  | .5433  | -.0273 | .0424  | .0047  |        |        |        |        |        |        |        |        |
| 150.000 | .1689  | .2873  | .5230  | .5274  | .0741  | .1065  | .0504  |        |        |        |        |        |        |        |        |
| 165.000 | .1699  |        | .5058  |        | .3023  | .1489  | -.4066 |        |        |        |        |        |        |        |        |
| 180.000 | .1757  | .2947  | .4877  |        |        |        |        |        |        |        |        |        |        |        |        |

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

**PAGE 3574**

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(01883X)

[illegible]

## SECTION (1) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     | 1.3236 | .5504 |       | .0791 | .0218  |        |       | -.0144 |       | -.0547 | -.0912 | -.1489 | -.1319 | -.0983 | -.0378 |
| 20.000  |        |       | .1352 | .0632 | -.0158 | -.0434 |       | -.0370 |       | -.0890 |        |        |        |        |        |
| 40.000  |        |       | .1522 | .0749 | -.0098 | -.0421 |       | -.0426 |       | -.1869 | -.1977 | -.1950 | -.1488 | -.1186 | -.0259 |
| 55.000  |        |       | .2959 | .1953 | .1204  | .0519  |       | -.0237 |       | -.1149 |        |        |        |        |        |
| 70.000  |        |       | .4272 | .1953 | .1204  | .0519  |       | -.0237 |       | -.0955 | -.4778 | -.2456 | -.1184 | -.0283 |        |
| 90.000  | .7401  |       | .5149 | .2817 | .2039  | .1654  |       | .0483  |       | -.2046 | -.4387 | -.4124 | -.1114 | -.0243 |        |
| 120.000 |        |       | .5892 | .3526 | .2712  | .1999  |       | .0699  |       | -.1655 | -.4042 | -.6287 | -.1534 | -.0367 |        |
| 140.000 |        |       | .6857 | .5047 | .3850  | .4101  |       | .2913  |       | -.2356 |        |        |        |        |        |
| 150.000 |        |       |       | .6103 | .5082  | .5376  |       | .7626  |       | -.4293 | -.5198 | -.2905 | -.2136 | -.0283 |        |
| 162.000 |        |       | .7315 |       |        |        |       |        | .4571 |        |        |        |        |        |        |
| 165.000 |        |       |       |       |        |        |       |        | .5336 |        |        |        |        |        |        |
| 183.000 |        |       |       |       |        |        |       | .8607  |       | -.4550 | -.4574 | -.2284 | -.2296 | -.0183 |        |
| 190.000 |        |       |       |       |        |        | .9678 |        |       |        |        |        |        |        |        |
| 200.000 |        |       | .7280 | .6220 | .5403  | .5854  |       | .8622  |       | -.4929 | -.5571 | -.2126 | -.2357 | -.0228 |        |

871718 .6520 .7290

**.8790 .9210 .9600**

[illegible]

|               |        |              |       |      |          |   |          |      |          |      |          |
|---------------|--------|--------------|-------|------|----------|---|----------|------|----------|------|----------|
| ALPHA ( 1 ) = | -4.063 | BETA ( 3 ) = | 4.235 | MACH | = 1.0977 | Q | = 598.52 | FN/L | = 709.53 | FN/L | = 3.1914 |
|---------------|--------|--------------|-------|------|----------|---|----------|------|----------|------|----------|

## SECTION 11 ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580  | .1770 | .2040  | .2310  | .30:0  | .3780  | .4570  | .5440  |
|---------|--------|-------|-------|-------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     | 1.3060 | .5304 |       |       |        |        |        |       |        |        |        |        |        |        |
| 20.000  |        |       | .1253 | .0727 | .0181  |        | -.0265 |       | -.0521 | .072   | -.041  | -.1415 | -.1155 | -.0348 |
| 20.000  |        |       | .1251 | .0567 | -.0248 | -.0629 | -.0251 |       | -.0713 |        |        |        |        |        |
| 40.000  |        |       | .2234 | .0540 | -.0046 | -.0326 | -.0712 |       | -.1442 |        | -.1994 | -.1455 | -.1031 | .0164  |
| 55.000  |        |       | .3275 | .1210 | .0600  | .0184  | -.0465 |       | -.1459 |        |        |        |        |        |
| 70.000  |        |       | .4040 | .1750 | .1191  | .0948  | -.0080 |       | -.1558 |        | -.2737 | -.1160 | -.0238 |        |
| 90.000  |        | .5875 | .4729 | .2327 | .1796  | .1088  | -.0053 |       | -.3072 |        | .025   | -.1270 | -.0505 |        |
| 120.000 |        |       | .5775 | .3961 | .2729  | .3026  | .1754  |       | .2942  | -.4343 | -.7015 | -.2250 | -.0528 |        |

(01083X)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 1 ) = -4.042 BETA ( 3 ) = 4.235

## SECTION 11 ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

|      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| X/LB | .6000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1590 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|

五

[illegible]

X/1日

|      |       |       |       |       |       |       |       |       |        |        |
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| X/LB | .6520 | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|

五

[illegible]

|               |      |              |        |      |          |   |          |   |          |      |          |
|---------------|------|--------------|--------|------|----------|---|----------|---|----------|------|----------|
| ALPHA ( 2 ) = | .020 | BETA ( 1 ) = | -3.899 | MACH | = 1.0996 | Q | = 598.85 | P | = 707.64 | RM/L | = 3.1885 |
|---------------|------|--------------|--------|------|----------|---|----------|---|----------|------|----------|

## SECTION (1) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

[illegible]

**IN**

[illegible]

9378

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ALPHA ( 2 ) = .020 BETA ( 1 ) = -3.899

(XEBB10)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460  | .0700  | .1120  | .1580  | .1860  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |       |        |        |        |        |        |        |        |        |        |        |        |       |
| 180.000 | 1.3303 | .8520  | .6066 | .5107  | .4398  | .4983  |        | .7722  |        | -.6088 | -.5342 | -.3082 | -.2575 | -.0485 |       |
| X/LB    | .6520  | .7290  | .7790 | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |        |       |        |        |        |        |        |        |        |        |        |        |        |       |
| 40.000  | .0870  | .0528  | .0140 | -.0616 | -.1538 | -.2263 | -.0363 |        | .3284  | .3229  |        |        |        |        |       |
| 70.000  | .0091  | .0269  | .0269 | -.0534 | -.1790 | -.1821 | -.2873 |        | .2883  | .2522  |        |        |        |        |       |
| 90.000  | .0302  | -.1447 | .0623 | .2669  | .0405  | -.0468 | -.0800 |        |        |        |        |        |        |        |       |
| 105.000 | .0606  | -.0920 | .1582 | .2681  | .0028  | -.1312 | -.1300 |        |        |        |        |        |        |        |       |
| 110.000 |        | .2587  |       | .2774  | -.0847 | -.1870 | -.1820 |        |        |        |        |        |        |        |       |
| 120.000 |        |        |       |        |        |        |        | -.3978 |        |        |        |        |        |        |       |
| 135.000 | .0402  | .0124  | .3901 | .2861  | -.1456 | -.1687 | -.2051 | -.2950 |        |        |        |        |        |        |       |
| 150.000 | .0678  | .1671  | .4455 | .4221  | -.1093 | -.0795 | -.1285 |        |        |        |        |        |        |        |       |
| 165.000 | .0751  | .4211  | .4383 | .4062  | -.0152 | -.0084 | -.1021 |        |        |        |        |        |        |        |       |
| 180.000 | .1027  | .2118  | .4044 | .5098  | .2496  | .0560  | -.4165 |        |        |        |        |        |        |        |       |

ALPHA ( 2 ) = .025 BETA ( 2 ) = .152 MACH = 1.0996

Q

P

707.64

RN/L = 3.1885

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580  | .1860  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 20.000  | 1.3351 | .6966 | .2589  | .1762  | .0873  |        |        | .0294  |        | .0074  | -.0340 | -.0867 | -.0855 | -.0964 | -.0258 |
| 40.000  |        |       | .2776  | .1611  | .0409  | .0159  |        | .0139  |        | -.0218 |        |        |        |        |        |
| 55.000  |        |       | .4032  | .1854  | .0847  | .0658  |        | -.0058 |        | -.0711 | -.0943 | -.1206 | -.0809 | -.0909 | .0001  |
| 70.000  |        |       | .4916  | .2761  | .1882  | .1426  |        | .0601  |        | -.0318 |        |        |        |        |        |
| 90.000  | .7196  |       | .5398  | .3132  | .2228  | .2016  |        | .0991  |        | -.0263 | -.4441 | -.2198 | -.1858 | -.0562 |        |
| 120.000 |        |       | .5789  | .3554  | .2404  | .2339  |        | .1179  |        | -.1252 | -.4280 | -.3163 | -.1796 | -.0565 |        |
| 140.000 |        |       | .6263  | .4532  | .3420  | .3399  |        | .3181  |        | -.1405 | -.3847 | -.6072 | -.1570 | -.0538 |        |
| 150.000 |        |       | .6299  | .5137  | .4156  | .4743  |        | .7354  |        | -.2222 | -.5810 | -.3841 | -.2067 | -.0315 |        |
| 162.000 |        |       |        |        |        |        |        |        | .4384  |        |        |        |        |        |        |
| 165.000 |        |       |        |        |        |        |        |        | .5024  |        |        |        |        |        |        |
| 169.000 |        |       |        |        |        |        |        | .8251  |        | -.5001 | -.5200 | -.2959 | -.2450 | -.0281 |        |
| 174.000 |        |       |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 180.000 | 1.3351 | .8440 | .6196  | .5196  | .4423  | .5062  | .9264  | .8077  |        | -.5638 | -.6286 | -.2781 | -.2486 | -.0288 |        |
| X/LB    | .6520  | .7290 | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |        |
| PHI     |        |       |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 40.000  | .0930  | .0422 | .0094  | -.0791 | -.1677 | -.2217 | -.0063 |        | .3839  | .3595  |        |        |        |        |        |
| 40.000  | .0452  | .0149 | -.0571 | -.1699 | -.1833 | -.1358 |        |        | .2405  | .2388  |        |        |        |        |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB810)

ALPHA ( 2 ) = .025 BETA ( 2 ) = .152

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .6520 | .7290  | .7790 | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|-------|--------|-------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |       |        |       |       |        |        |        |        |        |        |
| 70.000  | .0225 | -.1543 | .1493 | .2221 | -.0070 | -.0952 | -.1392 |        |        |        |
| 90.000  | .0521 | -.0782 | .1821 | .2030 | -.0486 | -.1480 | -.1858 |        |        |        |
| 105.000 |       |        | .2688 | .1820 | -.1385 | -.2142 | -.2419 |        |        |        |
| 110.000 |       |        |       |       |        |        |        | -.4268 |        |        |
| 120.000 | .0654 | .0767  | .3244 | .2083 | -.1778 | -.2330 | -.2854 | -.3696 |        |        |
| 135.000 |       |        | .3827 | .4068 | -.1069 | -.1521 | -.1968 |        |        |        |
| 150.000 | .0923 | .2060  | .3962 | .4511 | -.0296 | -.0924 | -.1844 |        |        |        |
| 165.000 | .0944 |        | .4112 | .1811 | -.0392 | -.4141 |        |        |        |        |
| 180.000 | .0880 | .1969  | .4159 | .5609 |        |        |        |        |        |        |

ALPHA ( 2 ) = .023 BETA ( 3 ) = .4214 MACH = 1.0996 Q = 598.85 P = 707.84 RN/L = 3.1885

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4870  | .5740  |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |        |
| 20.000  | 1.3227 | .6775 | .2487 | .1696 | .0843 |       |       | .0195 |        | .0035  | -.0469 | -.0959 | -.0977 | -.1146 | -.0484 |
| 40.000  |        |       | .2494 | .1471 | .0387 | .0299 |       | .0205 |        | -.0133 |        |        |        |        |        |
| 55.000  |        |       | .3328 | .1568 | .0639 | .0601 |       | .0288 |        | -.0476 | -.0935 | -.1380 | -.1058 | -.0982 | .0049  |
| 70.000  |        |       | .3948 | .1980 | .1205 | .1057 |       | .0319 |        | -.0733 | -.0879 | -.2904 | -.2174 | -.0534 |        |
| 90.000  |        | .5707 | .4309 | .2153 | .1473 |       |       | .0487 |        | -.0879 | -.4929 | -.3827 | -.1750 | -.0365 |        |
| 120.000 |        |       | .4735 | .2503 | .1535 | .1634 |       | .0537 |        | -.2245 | -.5051 | -.6757 | -.1778 | -.0369 |        |
| 140.000 |        |       | .5351 | .3625 | .2493 | .3135 |       | .2206 |        | -.4725 | -.4926 |        |        |        |        |
| 150.000 |        |       | .5760 | .4731 | .3704 | .4284 |       | .6577 | .3422  | -.5586 | -.6016 | -.3419 | -.2677 | -.0448 |        |
| 162.000 |        |       |       |       |       |       |       |       | .4248  |        |        |        |        |        |        |
| 165.000 |        |       |       |       |       |       |       | .7795 |        | -.5149 | -.6277 | -.3099 | -.2844 | -.0427 |        |
| 174.000 |        |       |       |       |       |       |       | .7873 |        |        |        |        |        |        |        |
| 180.000 | 1.3227 | .8233 | .6174 | .5119 | .4363 | .5008 | .8755 |       |        | -.6232 | -.5129 | -.3121 | -.2532 | -.0505 |        |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |        |

## PHI

|         |       |        |        |        |        |        |        |        |       |  |  |  |  |  |  |
|---------|-------|--------|--------|--------|--------|--------|--------|--------|-------|--|--|--|--|--|--|
| .000    | .0806 | .0514  | .0076  | -.0640 | -.1589 | -.2357 | -.0020 |        |       |  |  |  |  |  |  |
| 40.000  | .0806 | .0183  | -.0563 | -.0563 | -.1781 | -.2021 | -.2511 | .2971  | .3214 |  |  |  |  |  |  |
| 70.000  | .0333 | -.0995 | .1042  | .2017  | -.0521 | -.1851 | -.2080 | .2307  | .2028 |  |  |  |  |  |  |
| 90.000  | .0675 | -.0210 | .1637  | .1896  | -.1156 | -.2141 | -.2306 |        |       |  |  |  |  |  |  |
| 105.000 |       |        | .2365  | .1483  | -.2097 | -.2805 | -.3105 |        |       |  |  |  |  |  |  |
| 110.000 |       |        |        |        |        |        |        | -.4659 |       |  |  |  |  |  |  |
| 120.000 | .1060 | .1115  | .2722  | .0683  | -.2841 | -.3459 | -.3942 | -.4233 |       |  |  |  |  |  |  |
| 135.000 |       |        | .3624  | .3894  | -.1875 | -.2593 | -.2362 |        |       |  |  |  |  |  |  |
| 150.000 | .1123 | .1954  | .3903  | .4102  | -.0923 | -.2135 | -.2889 |        |       |  |  |  |  |  |  |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB810)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = .023 BETA ( 3 ) = 4.214

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7740 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 .1049 .3989  
180.000 .0937 .2101 .4073 .4806 .1107 -.1327 -.4264

ALPHA ( 3 ) = 3.934 BETA ( 1 ) = -3.903 MACH = 1.0985 Q = 598.62 P = 708.59 RN/L = 3.1905

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.3217 .8219 .3792 .2573 .1712 .0732 .1505 .0892 .0191 .0431 .0115 -.0412 -.0354 -.0666 -.0470  
20.000 .4223 .2699 .1427 .0732 .1505 .0892 .0191 .0431 .0115 -.0412 -.0354 -.0666 -.0470  
40.000 .5696 .3301 .2126 .1505 .0892 .0191 .0431 .0115 -.0412 -.0354 -.0666 -.0470  
55.000 .6465 .4250 .3246 .2497 .1756 .0716 .0798 .0306 -.3504 -.1913 -.2022 -.1059  
70.000 .6611 .4404 .3332 .2920 .1958 .0798 .0306 -.3504 -.1913 -.2022 -.1059  
90.000 .8290 .4550 .3384 .3217 .2260 .0058 -.3197 -.5442 -.3108 -.1807  
120.000 .6369 .4692 .3624 .4195 .4169 .0880  
140.000 .5627 .4366 .3472 .4354 .7890  
150.000 .5024  
162.000 .5330  
165.000 .8180  
169.000 .8969  
174.000 .7342  
180.000 .9990 .9600 .9990 1.0180 1.0460

X/LB

PHI

.000 .1436 .1665 .1232 .0318 -.0718 -.1678 -.0197  
40.000 .0885 .1372 .0368 -.1078 -.1065 -.2929  
70.000 -.0684 -.2517 -.3211 .1522 -.0261 -.0682 -.0471  
90.000 -.0342 -.1794 -.0863 .1407 -.0536 -.1721 -.1030  
105.000 .1304 .1388 -.1338 -.2468 -.1117  
110.000  
120.000 .2696 .1486 -.1733 -.2405 -.2575  
135.000 .3062 .2972 .1600 .1536 -.1968  
150.000 .3038 .3060 -.0820 -.0751 -.1820  
165.000 .3120 .1968 .0139 -.4258  
180.000 .3056 .3920

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TABULATED PRESSURE DATA - 0A148 ( AXES 11-073-1 )

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AXES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB10)

ALPHA ( 3 ) = 3.940 BETA ( 2 ) = .149 MACH = 1.0985 Q = 598.62 P = 708.59 RN/L = 3.1905

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |        |
| .000    | 1.3287 | .8260 | .3824 | .2646 | .1769 |       |       | .0939 | .0428  |        | .0130  | -.0379 | -.0387 | -.0626 | -.0418 |
| 20.000  |        |       | .4044 | .2588 | .1388 | .0714 |       | .0877 | .0262  |        |        |        |        |        |        |
| 40.000  |        |       | .4967 | .2864 | .1807 | .1313 |       | .1003 | .0207  |        | -.0197 | -.0599 | -.0342 | -.0810 | -.0028 |
| 55.000  |        |       | .5415 | .3302 | .2354 | .1878 |       | .1295 | .0240  |        |        |        |        |        |        |
| 70.000  |        |       | .5482 | .3321 | .2311 | .2175 |       | .1343 | .0173  |        | -.3901 | -.2197 | -.2121 | -.1064 |        |
| 90.000  |        | .6887 | .5597 | .3473 | .2402 | .2484 |       | .1561 | -.0638 |        | -.4201 | -.2722 | -.2591 | -.0836 |        |
| 120.000 |        |       | .5624 | .3959 | .2892 | .3604 |       | .3411 | -.1215 |        | -.3918 | -.6113 | -.2226 | -.0938 |        |
| 140.000 |        |       |       |       |       |       |       |       | -.2204 |        |        |        |        |        |        |
| 150.000 |        |       | .5339 | .4235 | .3233 | .4167 |       | .7067 | -.5104 |        | -.6881 | -.4713 | -.2035 | -.0525 |        |
| 151.000 |        |       |       |       |       |       |       |       | .4250  |        |        |        |        |        |        |
| 162.000 |        |       |       |       |       |       |       |       | .4769  |        |        |        |        |        |        |
| 165.000 |        |       |       |       |       |       |       |       |        | -.5515 | -.5829 | -.3614 | -.2316 | -.0452 |        |
| 169.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |        |
| 174.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |        |
| 180.000 | 1.3287 | .7117 | .5046 | .4035 | .3416 | .4402 | .8770 | .7873 |        | -.6852 | -.6804 | -.3397 | -.2467 | -.0409 |        |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |        |

## PHI

| X/LB    | .000  | .1415  | .1572  | .1167  | .0303 | -.0685 | -.1604 | .0142  |        |
|---------|-------|--------|--------|--------|-------|--------|--------|--------|--------|
| .000    |       |        |        |        |       |        |        |        | .4955  |
| 40.000  |       |        | .1265  | .1363  | .0392 | -.0958 | -.1208 | -.1900 | .3893  |
| 70.000  |       | -.0768 | -.2534 | -.2111 | .1265 | -.0674 | -.1486 | -.1556 | .2619  |
| 90.000  |       | -.0402 | -.1794 | .0082  | .1209 | -.1184 | -.1948 | -.1883 |        |
| 105.000 |       |        |        | .1646  | .0751 | -.1952 | -.2722 | -.3022 |        |
| 110.000 |       |        |        |        |       |        |        |        | -.4259 |
| 120.000 |       | -.0012 | -.0447 | .2231  | .1093 | -.2104 | -.2815 | -.3315 | -.3998 |
| 135.000 |       |        |        | .2756  | .3638 | -.1362 | -.2050 | -.2549 |        |
| 150.000 | .0506 | .0656  |        | .2909  | .4783 | -.0598 | -.1528 | -.2338 |        |
| 165.000 | .0601 |        |        | .3041  |       | .1327  | -.2923 | -.4281 |        |
| 180.000 | .0661 | .0647  |        | .3201  | .5240 |        |        |        |        |

ALPHA ( 3 ) = 3.944 BETA ( 3 ) = .4204 MACH = 1.0985 Q = 598.62 P = 708.59 RN/L = 3.1905

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040 | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|-------|--------|--------|--------|--------|--------|
| PHI     |        |       |       |       |       |       |       |       |        |       |        |        |        |        |        |
| .000    | 1.3109 | .8077 | .3730 | .2638 | .1608 |       |       | .0891 | .0420  |       | .0053  | -.0395 | -.0376 | -.0657 | -.0487 |
| 20.000  |        |       | .3657 | .2321 | .1143 | .0412 |       | .0798 | .0240  |       |        |        |        |        |        |
| 40.000  |        |       | .4085 | .2376 | .1412 | .0981 |       | .0934 | .0159  |       | -.0317 | -.0793 | -.0700 | -.0969 | .0005  |
| 55.000  |        |       | .4272 | .2350 | .1522 | .1253 |       | .0870 | -.0101 |       |        |        |        |        |        |
| 70.000  |        |       | .4316 | .2302 | .1390 | .1565 |       | .0879 | -.0319 |       | -.4346 | -.2890 | -.2637 | -.0924 |        |
| 90.000  |        | .5303 | .4498 | .2436 | .1393 | .1794 |       | .0964 | -.1428 |       | -.4768 | -.3395 | -.2618 | -.0760 |        |
| 120.000 |        |       | .4709 | .3102 | .2056 | .3050 |       | .2466 | -.2244 |       | -.4711 | -.6538 | -.1970 | -.0583 |        |

AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

(01883X)

$$\text{ALPHA} (3) = 3.944 \quad \text{BETA} (3) = 4.204$$

## SECTION (1) CRBITER FUSELAGE

## DEPENDENT VARIABLE CP

|         |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|
| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
| PHI     |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 140.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 151.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 159.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 180.000 | 1.3109 | .6806 | .4826 | .4051 | .3300 | .4265 | .8336 |       |        |        |       |       |       |       |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |

$$\text{ALPHA} (4) = 7.882 \quad \text{BETA} (1)$$

## SECTION 1: ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

[illegible]

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TABULATED PRESSURE DATA - 0A148 ( AVES 11-073-1 )

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AVES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB10)

ALPHA ( 4 ) = 7.882 BETA ( 1 ) = -3.899

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1650  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |       |       |
| 180.000 | 1.2889 | .5693  | .3614  | .3117  | .2374  | .2620  |        | .6943  | -.7176 | -.6509 | -.4076 | -.2248 | -.0685 |       |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |       |       |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |       |       |
| .000    | .2304  | .2435  | .1906  | .0920  | -.0126 | -.1188 | .0232  |        | .5328  | .4269  |        |        |        |       |       |
| 40.000  | .2192  | .2128  | .2128  | .1062  | -.0503 | -.0474 | -.2417 |        | .4073  | .2981  |        |        |        |       |       |
| 70.000  | -.1085 | -.3297 | -.4017 | .0112  | -.0191 | -.0621 | -.0921 |        |        |        |        |        |        |       |       |
| 90.000  | -.0797 | -.2619 | -.2968 | .0216  | -.0481 | -.1287 | -.1235 |        |        |        |        |        |        |       |       |
| 105.000 |        | .0138  | .0688  | -.1140 | -.1924 | -.1740 |        |        |        |        |        |        |        |       |       |
| 110.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |       |       |
| 120.000 | -.1590 | -.1864 | .1624  | .1067  | -.1893 | -.2143 | -.2110 | -.3851 |        |        |        |        |        |       |       |
| 135.000 |        |        | .1459  | .3312  | -.1962 | -.1747 | -.1922 | -.2921 |        |        |        |        |        |       |       |
| 140.000 | -.0159 | -.0585 | .1636  | .4060  | -.0936 | -.1352 | -.2205 |        |        |        |        |        |        |       |       |
| 165.000 | .0339  | .2141  |        | .1418  | -.0520 | -.4605 |        |        |        |        |        |        |        |       |       |
| 180.000 | .0516  | -.0204 | .2618  | .5106  |        |        |        |        |        |        |        |        |        |       |       |

ALPHA ( 4 ) = 7.887 BETA ( 2 ) = .144 MACH = 1.0980 Q = 588.61 P = 709.30 RN/L = 3.1901

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580  | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |        |        |        |       |        |        |        |        |        |        |       |
| 20.000  | 1.2948 | .9476 | .5105 | .3623 | .2650  |        |        | .1428 |        | .1068  | .0684  | .0330  | .0299  | .0044  | .0127 |
| 40.000  |        |       | .5304 | .3614 | .2357  | .1620  |        | .1380 |        | .0950  |        |        |        |        |       |
| 55.000  |        |       | .5850 | .3818 | .2707  | .2036  |        | .1818 |        | .1008  | .0468  | .0056  | .0258  | -.0178 | .0157 |
| 70.000  |        |       | .5711 | .3697 | .2700  | .2093  |        | .1521 |        | .0942  |        |        |        |        |       |
| 90.000  |        | .6353 | .5402 | .3383 | .2326  | .2291  | .1582  | .1582 |        | .0598  | -.3327 | -.2131 | -.2034 | -.2153 |       |
| 120.000 |        |       | .5244 | .3288 | .2262  | .2490  | .1830  | .1830 |        | -.0050 | -.3853 | -.2510 | -.2715 | -.1832 |       |
| 140.000 |        |       | .4801 | .3230 | .2236  | .5355  | .3555  | .3555 |        | -.0943 | -.4076 | -.5839 | -.3630 | -.1587 |       |
| 150.000 |        |       | .4159 | .3273 | .2274  | .3621  |        | .6881 |        | -.2109 | -.5091 | -.5417 | -.2208 | -.0811 |       |
| 151.000 |        |       |       |       |        |        |        |       | .4130  |        |        |        |        |        |       |
| 162.000 |        |       |       |       |        |        |        |       | .4493  |        |        |        |        |        |       |
| 165.000 |        |       |       |       |        |        |        |       |        | -.6087 | -.6355 | -.4104 | -.2143 | -.0571 |       |
| 169.000 |        |       |       |       |        |        |        |       |        |        |        |        |        |        |       |
| 174.000 |        |       |       |       |        |        |        |       |        |        |        |        |        |        |       |
| 180.000 | 1.2948 | .5644 | .3778 | .3045 | .2464  | .3769  | .8243  | .7454 |        | -.7425 | -.7202 | -.3864 | -.2088 | -.0516 |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |       |       |       |        |        |        |       |        |        |        |        |        |        |       |
| .000    | .2394  | .2517 | .1934 | .1008 | -.0015 | -.1092 | .0673  |       |        |        |        |        |        |        |       |
| 40.000  | .2453  | .2149 | .2149 | .1159 | -.0370 | -.0475 | -.1582 |       | .5564  | .4293  |        |        |        |        |       |
|         |        |       |       |       |        |        |        |       | .4124  | .2873  |        |        |        |        |       |

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEBB10)

ALPHA ( 4 ) = 7.887 BETA ( 2 ) = .144

AMES 11-07310A148) -140A/B/C/R ORB FUSELAGE

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9980  | 1.0180 | 1.0480 |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |       |        |        |        |        |        |        |
| 70.000  | -.1189 | -.3406 | -.3989 | .0217 | -.0745 | -.1149 | -.1295 |        |        |        |
| 90.000  | -.0754 | -.2369 | -.2216 | .0127 | -.1459 | -.1683 | -.1589 |        |        |        |
| 105.000 |        |        | .0236  | .0565 | -.2443 | -.2383 | -.2781 |        |        |        |
| 110.000 |        |        |        |       |        |        |        | -.4106 |        |        |
| 120.000 | -.0451 | -.1097 | .1295  | .0840 | -.2714 | -.3159 | -.3045 | -.3297 |        |        |
| 135.000 |        |        | .1637  | .3479 | -.1789 | -.2598 | -.2812 |        |        |        |
| 150.000 | .0441  | -.0416 | .2360  | .5292 | -.1133 | -.2220 | -.2838 |        |        |        |
| 165.000 | .0652  |        | .2709  |       | .0787  | -.1581 | -.4590 |        |        |        |
| 180.000 | .0722  | -.0142 | .2843  | .5659 |        |        |        |        |        |        |

ALPHA ( 4 ) = 7.888 BETA ( 3 ) = 4.206 MACH = 1.0980 Q = 598.61 P = 709.30 RV/L = 3.1901

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 20.000  | 1.2790 | .9309 | .4966 | .3574 | .2443 |       |       | .1344 | .1023  | .0849  | .0247  | .0372  | .0032  | .0159  |       |
| 40.000  |        |       | .4798 | .3274 | .2052 | .1313 |       | .1208 | .0814  | .0735  | .0174  | -.0254 | -.0111 | -.0378 | .0085 |
| 55.000  |        |       | .4836 | .3116 | .2057 | .1497 |       | .1334 | .0963  | .0402  |        |        |        |        |       |
| 70.000  |        |       | .4459 | .2603 | .1639 | .1356 |       | .0963 | .0103  |        |        |        |        |        |       |
| 90.000  |        | .4798 | .4197 | .2293 | .1286 | .1596 |       | .1022 | -.0765 | -.2697 | -.2824 | -.2705 | -.1879 |        |       |
| 120.000 |        |       | .4158 | .2264 | .1241 | .1896 |       | .1225 | -.0765 | -.4342 | -.3150 | -.3254 | -.1603 |        |       |
| 140.000 |        |       | .4002 | .2508 | .1472 | .2914 |       | .2761 | -.1824 | -.4675 | -.6314 | -.2467 | -.1032 |        |       |
| 150.000 |        |       | .3731 | .2913 | .1790 | .3297 |       | .6128 | -.3189 | -.7332 | -.4482 | -.1924 | -.0568 |        |       |
| 162.000 |        |       |       |       |       |       |       |       | .3183  |        |        |        |        |        |       |
| 165.000 |        |       |       |       |       |       |       |       | .3726  |        |        |        |        |        |       |
| 169.000 |        |       |       |       |       |       |       |       |        | -.6124 | -.6745 | -.3940 | -.1993 | -.0493 |       |
| 174.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 180.000 | 1.2790 | .5327 | .3755 | .3090 | .2222 | .3617 | .7922 | .7088 |        | -.7270 | -.6514 | -.4051 | -.2200 | -.0599 |       |

X/LB

PHI

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| 40.000  | .2446  | .2534  | .1966  | .0857  | -.0189 | -.1181 | .0361  |        |        |        |
| 70.000  | .2679  | .2118  | .1045  | .1045  | -.0471 | -.1075 | -.1950 | .5287  | .4272  |        |
| 90.000  | -.0886 | -.3240 | -.1387 | .0122  | -.1714 | -.2631 | -.2343 | .3650  | .2672  |        |
| 105.000 | -.0321 | -.2105 | -.1373 | -.0218 | -.2350 | -.2988 | -.3155 |        |        |        |
| 110.000 |        |        | .0163  | .0009  | -.3055 | -.3974 | -.4121 |        |        |        |
| 120.000 | .0422  | -.0846 | .0584  | -.0524 | -.3484 | -.4023 | -.5243 | -.4955 |        |        |
| 135.000 |        |        | .2330  | .2925  | -.2715 | -.3619 | -.3817 | -.4749 |        |        |
| 150.000 | .0945  | .0054  | .2838  | .4185  | -.1984 | -.3156 | -.3869 |        |        |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEBB10)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 7.888 BETA ( 3 ) = 4.206

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520 | .7290  | .7790 | .8210 | .8790 | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|-------|--------|-------|-------|-------|--------|--------|-------|--------|--------|
| PHI     |       |        |       |       |       |        |        |       |        |        |
| 165.000 | .0902 | .2705  |       |       | .0033 | -.2664 | -.4737 |       |        |        |
| 180.000 | .0634 | -.0002 | .2497 | .5297 |       |        |        |       |        |        |

ALPHA ( 5 ) = 11.921 BETA ( 1 ) = -3.873 MACH = 1.0991 Q = 599.16 P = 708.60 RN/L = 3.1919

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |       |       |       |       |       |       |        |        |        |        |        |        |        |
| .000    | 1.2353 | 1.0556 | .6370 | .4642 | .3599 |       |       | .2037 | .1817  | .1239  | .1094  | .1142  | .0837  | .2031  |        |
| 20.000  |        |        | .6789 | .4906 | .3580 | .2636 |       | .2144 | .1820  | .1330  | .1137  | .1368  | .0920  | .2250  |        |
| 40.000  |        |        | .7480 | .5284 | .4110 | .3149 |       | .2550 | .2052  | .1731  |        |        |        |        |        |
| 55.000  |        |        | .7047 | .4942 | .3820 | .2868 |       | .2213 | .1518  | .1031  | .0115  | .3503  | -.5219 | -.7306 | -.3515 |
| 70.000  |        |        | .6298 | .4326 | .3155 | .2901 |       | .2274 | .1031  | .3074  | -.1490 | -.1945 | -.2815 |        |        |
| 90.000  |        | .7107  | .5700 | .3908 | .2698 | .2820 |       | .3988 | .0115  | .3503  | -.5219 | -.7306 | -.3515 |        |        |
| 120.000 |        |        | .4432 | .2838 | .1843 | .2949 |       |       | -.0892 | -.2211 | -.7886 | -.6910 | -.3014 | -.1407 |        |
| 140.000 |        |        | .3149 | .2164 | .1332 | .3065 |       | .7510 | .4718  |        |        |        |        |        |        |
| 150.000 |        |        |       |       |       |       |       |       | .4803  |        |        |        |        |        |        |
| 162.000 |        |        |       |       |       |       |       | .7596 |        |        |        |        |        |        |        |
| 165.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |        |        |
| 169.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |        |        |
| 174.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |        |        |
| 180.000 | 1.2353 | .4233  | .2419 | .2242 | .1398 | .3105 | .8101 | .6608 |        |        |        |        |        |        |        |
| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |        |

PHI

| X/LB    | .3153  | .3206  | .2614  | .1618  | .0629  | -.0596 | .0944  | .6373 | .4625 | .3237 |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|
| .000    |        |        | .2370  | .1817  | .0188  | -.0126 | -.1776 |       |       |       |
| 40.000  | .3372  |        | -.4695 | -.0317 | -.0755 | -.2301 | -.2053 |       |       |       |
| 70.000  | -.1441 | -.3849 | -.4695 | -.0317 | -.0755 | -.2301 | -.2053 |       |       |       |
| 90.000  | -.0734 | -.3086 | -.3885 | -.0035 | -.0891 | -.2003 | -.3395 |       |       |       |
| 105.000 |        |        | -.1083 | .0656  | -.1418 | -.2594 | -.3415 |       |       |       |
| 110.000 |        |        |        |        |        |        |        |       |       |       |
| 120.000 | -.1804 | -.1958 | .0575  | .1115  | -.1888 | -.2593 | -.2329 |       |       |       |
| 135.000 |        |        | .0583  | .2828  | -.2043 | -.2027 | -.2396 |       |       |       |
| 150.000 | -.0580 | -.1835 | .0601  | .4566  | -.1363 | -.1986 | -.2916 |       |       |       |
| 165.000 | .0395  |        | .1618  |        | .0856  | -.0871 | -.4751 |       |       |       |
| 180.000 | .0763  | -.0443 | .2311  | .5708  |        |        |        |       |       |       |

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TABULATED PRESSURE DATA - 0A148 ( AVES 11-073-1 )

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AVES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB10)

ALPHA ( 5 ) = 11.930 BETA ( 2 ) = .146 MACH = 1.0991 Q = 599.16 P = 708.60 RN/L = 3.1919

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|--------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|
| PHI     | .000   | 1.2399 | 1.0631 | .6380 | .4719 | .3579 |       | .2095 | .1888  | .1330  | .1122 | .1117 | .0957 | .1758 |       |
| 20.000  |        |        | .6488  | .4661 | .3353 | .2517 |       | .2050 | .1786  | .1701  | .0951 | .0743 | .0919 | .0698 | .1932 |
| 40.000  |        |        | .6572  | .4615 | .3482 | .2599 |       | .1488 | .1215  |        |       |       |       |       |       |
| 55.000  |        |        | .5803  | .3781 | .2697 | .1905 |       | .1640 | .1042  | .2948  | .2054 | .2054 | .2054 | .3315 |       |
| 70.000  |        |        | .5129  | .3208 | .2089 | .2131 |       | .1957 | .0421  | .3955  | .2332 | .2332 | .2682 | .3124 |       |
| 90.000  |        | .5677  | .4722  | .2892 | .1841 | .2251 |       | .3566 | .0684  | .4111  | .5702 | .7047 | .2070 |       |       |
| 120.000 |        |        | .3863  | .2355 | .1349 | .2904 |       |       | .1942  |        |       |       |       |       |       |
| 140.000 |        |        | .2999  | .2272 | .1212 | .3106 |       | .6768 | .4835  | .7871  | .6021 | .2523 | .0960 |       |       |
| 150.000 |        |        |        |       |       |       |       | .4052 |        |        |       |       |       |       |       |
| 151.000 |        |        |        |       |       |       |       | .4285 |        |        |       |       |       |       |       |
| 162.000 |        |        |        |       |       |       |       |       |        |        |       |       |       |       |       |
| 165.000 |        |        |        |       |       |       |       |       |        |        |       |       |       |       |       |
| 169.000 |        |        |        |       |       |       |       |       |        |        |       |       |       |       |       |
| 174.000 |        |        |        |       |       |       |       |       |        |        |       |       |       |       |       |
| 180.000 | 1.2399 | .4021  | .2606  | .2008 | .1383 | .3255 | .7846 | .7046 |        |        |       |       |       |       |       |
| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |

PHI

|         |       |       |       |       |       |       |       |       |       |       |  |  |  |  |  |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|--|--|--|--|
| .000    | .3125 | .3269 | .2699 | .1652 | .0681 | .0475 | .1153 |       | .6496 | .4623 |  |  |  |  |  |
| 40.000  | .3329 | .2927 | .1890 | .0266 | .0046 | .1135 |       | .4972 | .3089 |       |  |  |  |  |  |
| 70.000  | .1063 | .4255 | .5010 | .1864 | .1573 | .2086 | .1630 |       |       |       |  |  |  |  |  |
| 90.000  | .0737 | .3137 | .4038 | .0890 | .1487 | .2257 | .2550 |       |       |       |  |  |  |  |  |
| 105.000 |       | .1368 | .0005 | .0005 | .4360 | .3119 | .3446 |       |       |       |  |  |  |  |  |
| 110.000 |       |       |       |       |       |       |       | .4483 |       |       |  |  |  |  |  |
| 120.000 | .0425 | .1386 | .0384 | .0719 | .3104 | .3022 | .3550 | .3780 |       |       |  |  |  |  |  |
| 135.000 |       | .0979 | .0979 | .3262 | .2298 | .3030 | .3117 |       |       |       |  |  |  |  |  |
| 150.000 | .0344 | .1022 | .1948 | .5408 | .1852 | .2940 | .3245 |       |       |       |  |  |  |  |  |
| 165.000 | .0810 |       | .2333 |       | .0524 | .2005 | .4826 |       |       |       |  |  |  |  |  |
| 180.000 | .0918 | .0326 | .2481 | .6093 |       |       |       |       |       |       |  |  |  |  |  |

ALPHA ( 5 ) = 11.928 BETA ( 3 ) = .4214 MACH = 1.0991 Q = 599.16 P = 708.60 RN/L = 3.1919

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230  | .0460 | .0700 | .1120 | .1580 | .1680 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     | .000  | 1.2242 | 1.0449 | .6235 | .4701 | .3379 |       | .2086 | .1777 | .1313 | .1030 | .1130 | .0895 | .1831 |       |
| 20.000  |       |        | .5929  | .4233 | .2942 | .2098 |       | .1748 | .1471 | .1189 | .0468 | .0324 | .0512 | .0303 | .1748 |
| 40.000  |       |        | .5456  | .3749 | .2711 | .1917 |       | .1588 | .0767 | .0657 |       |       |       |       |       |
| 55.000  |       |        | .4481  | .2556 | .1523 | .0915 |       | .0722 | .0657 | .3334 | .2768 | .2768 | .2768 | .3600 |       |
| 70.000  |       |        | .3728  | .2129 | .1022 | .1336 |       | .1017 | .0099 | .4107 | .3015 | .3346 | .2487 |       |       |
| 90.000  |       | .4130  | .3727  | .1974 | .0891 | .1772 |       | .1358 | .1474 | .4713 | .6157 | .3629 | .1549 |       |       |
| 120.000 |       |        | .3188  | .1855 | .0726 | .2663 |       | .2956 |       |       |       |       |       |       |       |



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TABULATED PRESSURE DATA - 0A148 ( AVES 11-073-1 )  
AVES 11-073(0A148) -140A/B/C/R ORB FUSELAGE  
(XEBB11) 1 05 AUG 75

REFERENCE DATA  
SREF = 2590.0000 SQ.FT. XMRP = 1076.6800 IN. XO  
LREF = 474.8000 IN. YMRP = .0000 IN. YO  
BREF = 936.0680 IN. ZMRP = 375.0000 IN. ZO  
SCALE = .0300

PARAMETRIC DATA  
RUDDER = .000 SPOBRK = 85.000  
BOFLAP = 22.500 L-ELVN = .000  
R-ELVN = .000 MACH = .900

ALPHA ( 1 ) = -4.067 BETA ( 1 ) = -3.873 MACH = .90043 Q = 600.11 P = 1057.3 RN/L = 3.5778

| SECTION ( 1 ) ORBITER FUSELAGE |        |        |        |        |        |        |        |        |        |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| DEPENDENT VARIABLE CP          |        |        |        |        |        |        |        |        |        |
| X/LB                           | .0060  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  |
| PHI                            | 0.000  | 1.1945 | .3537  | -.0800 | -.1177 | -.1646 | -.2222 | -.2222 | -.2221 |
| 20.000                         |        |        | -.0504 | -.1319 | -.2325 | -.2474 | -.2633 | -.2633 | -.2532 |
| 40.000                         |        |        | .1490  | -.1134 | -.2187 | -.2543 | -.3632 | -.4376 | -.4376 |
| 55.000                         |        |        | .3372  | .0880  | -.0024 | -.1007 | -.1990 | -.2308 | -.2308 |
| 70.000                         |        |        | .4618  | .2182  | .1267  | .0628  | -.0590 | -.2312 | -.7259 |
| 90.000                         |        | .7329  | .5507  | .3093  | .2057  | .1111  | -.0547 | -.2090 | -.6627 |
| 120.000                        |        |        | .6391  | .4563  | .3335  | .3251  | .1834  | -.2379 | -.5865 |
| 140.000                        |        |        | .6436  | .5019  | .4047  | .4180  | .6590  | -.1644 | -.1644 |
| 150.000                        |        |        |        |        |        |        |        | -.2772 | -.8595 |
| 151.000                        |        |        |        |        |        |        |        |        | -.0576 |
| 162.000                        |        |        |        |        |        |        |        |        | -.0251 |
| 165.000                        |        |        |        |        |        |        |        |        | -.0251 |
| 169.000                        |        |        |        |        |        |        |        |        | -.0488 |
| 174.000                        |        |        |        |        |        |        |        |        | -.0488 |
| 180.000                        |        |        |        |        |        |        |        |        | -.0488 |
| X/LB                           | 1.1945 | .8446  | .5843  | .4685  | .3919  | .4175  | .8324  | .6420  | .7203  |
| PHI                            | 0.000  | 1.1945 | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9980  |
| 40.000                         |        |        | -.1321 | -.1981 | -.2430 | -.3439 | -.0909 | .0783  | .4044  |
| 70.000                         |        |        | -.2439 | -.2368 | -.3432 | -.3086 | -.0866 | .0250  | .2322  |
| 90.000                         |        |        | .0395  | -.0151 | .0858  | .1844  | .0081  | -.0596 | .1251  |
| 105.000                        |        |        | .0680  | .0315  | .1444  | .2188  | -.0775 | -.1040 |        |
| 119.000                        |        |        |        |        | .2109  | .2628  | -.1783 | -.1412 |        |
| 120.000                        |        |        |        |        | .3100  | .3596  | -.2345 | -.1608 |        |
| 135.000                        |        |        |        |        | .3757  | .4548  | -.1312 | -.0403 |        |
| 157.000                        |        |        |        |        | .3745  | .4720  | -.0361 | .0079  |        |
| 165.000                        |        |        |        |        | .3505  | .1633  | .0262  | -.3593 |        |
| 180.000                        |        |        |        |        | .3328  | .5764  |        |        |        |

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TABULATED PRESSURE DATA - 0A148 ( MES 11-073-1 )

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ANES 11-073(OA148) -140./B/C/R ORB FUSELAGE

**(1185X)**

ALPHA ( 1 ) = -4.047    BETA ( 2 ) = .148    MACH = .90~43    Q = 600.11    P = 1057.3    RN/L = 3.5778

## SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE 'P

| X/LB    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2910  | .3010  | .3780  | .4970  | .5748  |
|---------|--------|-------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |        |        |        |        |       |        |        |        |        |        |        |        |        |
| .000    | 1.2016 | .3614 | -.0695 | -.1016 | -.1635 | -.2214 |       | -.2082 | -.2194 |        | -.1746 | -.0622 | -.0207 | .0133  | -.0062 |
| 20.000  |        |       | -.0497 | -.1246 | -.2183 | -.2179 |       | -.2390 | -.2345 |        |        |        |        |        |        |
| 40.000  |        |       | .1038  | -.1080 | -.2003 |        |       | -.3080 | -.3619 |        |        |        |        |        |        |
| 60.000  |        |       | .2469  | .0197  | -.0600 | -.1326 |       | -.2359 | -.3427 |        | -.3284 | -.0742 | -.0347 | -.0081 | -.0135 |
| 70.000  |        |       | .3487  | .1127  | .0278  |        |       | -.1750 | -.3427 |        |        |        |        |        |        |
| 80.000  |        |       | .4321  | .1879  | .0997  | -.0156 |       | -.1696 | -.4500 |        | -.7703 | -.0359 | .0490  | .0947  |        |
| 120.000 | .5857  |       | .5387  | .3519  | .2266  | .2351  |       | .0842  | -.4280 |        | -.7308 | -.0871 | .0364  | .0826  |        |
| 140.000 |        |       |        |        |        |        |       |        | -.4411 |        | -.6743 | -.1661 | .0133  | .0526  |        |
| 150.000 |        |       | .5921  | .4697  | .3621  | .3750  |       | .5816  | -.7964 |        | -.8362 | -.0281 | .0223  | .0506  |        |
| 151.000 |        |       |        |        |        |        |       |        | .2334  |        |        |        |        |        |        |
| 162.000 |        |       |        |        |        |        |       |        | .3136  |        |        |        |        |        |        |
| 165.000 |        |       |        |        |        |        |       |        |        | -.8458 | -.7354 | -.0098 | .0235  | .0520  |        |
| 169.000 |        |       |        |        |        |        |       | .6899  |        |        |        |        |        |        |        |
| 174.000 |        |       |        |        |        |        | .6814 |        |        |        |        |        |        |        |        |
| 180.000 | 1.2016 | .6404 | .6001  | .4801  | .4046  | .4274  | .6814 |        | -.9537 |        | -.7284 | .0019  | .0247  | .0520  |        |

ALPHA ( 1 ) = -4.057    BETA ( 3 ) = 4.239    MACH = .90043    Q = 500.11    P = 1057.3    RMVL = 3.5778

## SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/L6    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580 | .1660  | .1770 | .2040  | .2510  | .3010  | .3780  | .4570 | .5790  |
|---------|--------|-------|--------|--------|--------|--------|-------|--------|-------|--------|--------|--------|--------|-------|--------|
| PHI     |        |       |        |        |        |        |       |        |       |        |        |        |        |       |        |
| .000    | 1.1833 | .3373 | -.0866 | -.1001 | -.1768 |        |       | -.2149 |       | -.2380 | -.1773 | -.0715 | -.0271 | .0061 | -.0174 |
| 20.000  |        |       | -.0779 | -.1347 | -.2231 | -.2229 |       | -.2269 |       | -.2382 |        |        |        |       |        |
| 40.000  |        |       | .0376  | -.1395 | -.2077 | -.1969 |       | -.2740 |       | -.3111 | -.2930 | -.0456 | -.0698 | .0021 | .0069  |
| 55.000  |        |       | .1456  | -.0603 | -.1273 | -.1650 |       | -.2688 |       | -.3848 |        |        |        |       |        |
| 70.000  |        |       | .2248  | -.0032 | -.0574 | -.0919 |       | -.2405 |       | -.4003 | -.8336 | -.0791 | .0501  | .0833 |        |
| 90.000  |        | .4213 | .3009  | .0593  | .0006  | -.0854 |       | -.2569 |       | -.5877 | -.7239 | -.1764 | .0477  | .0357 |        |
| 120.000 |        |       | .4184  | .2338  | .1035  | .1187  |       | -.0660 |       | -.5910 | -.8178 | -.2524 | -.0098 | .0272 |        |



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-873-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB811)

ALPHA ( 2 ) = .016 BETA ( 1 ) = -3.906

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1380 | .1660 | .1770  | .2040   | .2510  | .3010  | .3790 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|---------|--------|--------|-------|-------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |         |        |        |       |       |       |
| 180.000 | 1.2108 | .7142 | .4572 | .3586 | .2863 | .3337 |       | .5861 |        | -1.0578 | -.8708 | -.0566 | .0133 | .0097 |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460  |        |        |       |       |       |

| PHI     | .000   | -.0290 | -.0770 | -.1464 | -.2679 | -.2835 | -.1083 | .1337  | .3787 | .2115 |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--|--|--|--|--|
| 40.000  | -.0959 |        |        | -.1319 | -.2545 | -.3061 | -.1195 | -.0741 | .3060 | .1405 |  |  |  |  |  |
| 70.000  | -.0970 | -.1741 |        | .0182  | .1669  | -.0291 | .0146  | -.0457 |       |       |  |  |  |  |  |
| 90.000  | -.0566 | -.1115 |        | .0870  | .1968  | -.0807 | .0456  | -.0399 |       |       |  |  |  |  |  |
| 105.000 |        |        |        | .1560  | .2442  | -.1786 | -.0899 | -.1351 |       |       |  |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        | -.3945 |       |       |  |  |  |  |  |
| 120.000 | -.0440 | .0115  | .2705  | .3330  | .3061  | -.2761 | -.1390 | -.1393 |       |       |  |  |  |  |  |
| 135.000 |        |        |        | .3330  | .3843  | -.1932 | -.0655 | -.0924 |       |       |  |  |  |  |  |
| 150.000 | .0035  | .0859  |        | .3281  | .3229  | -.1282 | -.0280 | -.0631 |       |       |  |  |  |  |  |
| 165.000 | .0064  |        | .3008  |        |        | .1053  | -.0221 | -.3302 |       |       |  |  |  |  |  |
| 180.000 | .0108  | .0910  | .2795  |        | .4547  |        |        |        |       |       |  |  |  |  |  |

ALPHA ( 2 ) = .014 BETA ( 2 ) = .139 MACH = .8947 Q = 599.38 P = 1058.3 RN/L = 3.5741

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460  | .0700  | .1120  | .1380 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|-------|-------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|-------|-------|
| PHI     |        |       |       |        |        |        |       |        |        |        |        |        |        |       |       |
| 180.000 | 1.2172 | .5249 | .0766 | -.0004 | -.0703 | -.1397 |       | -.1521 |        | -.1750 | -.1831 | -.0635 | -.0182 | .0338 | .0304 |
| 20.000  |        |       | .0980 | -.0112 | -.1100 | -.1161 |       | -.1680 |        | -.1894 | -.2186 | -.0630 | -.0103 | .0216 | .0432 |
| 40.000  |        |       | .2309 | .0109  | -.0729 | -.1161 |       | -.1888 |        | -.2114 | -.2807 | -.0630 | -.0103 | .0216 | .0432 |
| 55.000  |        |       | .3313 | .1164  | .0330  | -.0342 |       | -.1397 |        | -.2414 | -.2637 | -.0956 | .0085  | .0473 | .0473 |
| 70.000  |        |       | .3853 | .1560  | .0877  | .0249  |       | -.1163 |        | -.3774 | -.7174 | -.1213 | .0116  | .0473 | .0473 |
| 90.000  | .5743  |       | .4312 | .1996  | .0877  | .0564  |       | -.1049 |        | -.4109 | -.6858 | -.2132 | .0139  | .0296 | .0296 |
| 120.000 |        |       | .4872 | .3072  | .1965  | .2215  |       | .0944  |        | -.5037 |        |        |        |       |       |
| 140.000 |        |       | .4938 | .3723  | .2718  | .3083  |       | .5521  |        | -.8395 | -.9505 | -.1675 | .0254  | .0178 | .0178 |
| 150.000 |        |       |       |        |        |        |       | .2085  |        | .2746  |        |        |        |       |       |
| 162.000 |        |       |       |        |        |        |       |        |        |        |        |        |        |       |       |
| 165.000 |        |       |       |        |        |        |       | .6492  |        | -.9234 | -.8606 | -.0763 | .0218  | .0194 | .0194 |
| 169.000 |        |       |       |        |        |        |       | .6308  |        | -.9409 | -.8575 | -.0475 | .0237  | .0209 | .0209 |
| 174.000 |        |       |       |        |        |        |       |        |        |        |        |        |        |       |       |
| 180.000 |        |       |       |        |        |        |       |        |        |        |        |        |        |       |       |
| X/LB    | 1.2172 | .7085 | .4822 | .3768  | .3024  | .3482  |       | .7735  |        |        |        |        |        |       |       |
|         | .6520  | .7290 | .7790 | .8210  | .8790  | .9210  | .9600 | .9990  | 1.0180 | 1.0460 |        |        |        |       |       |

PHI

| PHI    | .000   | -.0290 | -.0786 | -.1456 | -.2647 | -.2614 | -.1019 | .1344 | .4205 | .2251 |  |  |  |  |  |
|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|--|--|--|--|--|
| 40.000 | -.0631 |        |        | -.1330 | -.2490 | -.2786 | -.1031 | .0349 | .2880 | .1143 |  |  |  |  |  |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEBB11)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = .014 BETA ( 2 ) = .139

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |       |        |        |        |        |        |        |
| 70.000  | -.1159 | -.1887 | -.0265 | .0935 | -.1309 | -.0490 | -.0922 |        |        |        |
| 90.000  | -.0674 | -.1147 | .0456  | .1152 | -.1347 | -.0931 | -.1382 |        |        |        |
| 105.000 |        |        | .1213  | .1397 | -.3229 | -.1582 | -.1788 |        |        |        |
| 110.000 |        |        |        |       |        |        |        | -.3911 |        |        |
| 120.000 | -.0154 | .0143  | .1877  | .2948 | -.4068 | -.2234 | -.2184 | -.2808 |        |        |
| 135.000 |        |        | .2611  | .4066 | -.3010 | -.1467 | -.1448 |        |        |        |
| 150.000 | .0189  | .0813  | .2886  | .4719 | -.2083 | -.1336 | -.0989 |        |        |        |
| 165.000 | .0218  |        | .2919  |       | -.0299 | -.1379 | -.3626 |        |        |        |
| 180.000 | .0219  | .0956  | .2917  | .5242 |        |        |        |        |        |        |

ALPHA ( 2 ) = .024 BETA ( 3 ) = 4.220 MACH = .89947 Q = 599.38 P = 1058.3 RN/L = 3.5741

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460  | .0700  | .1120  | .1580 | .1860  | .1770   | .2040  | .2510  | .3010  | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|--------|--------|--------|-------|--------|---------|--------|--------|--------|-------|-------|-------|
| PHI     |        |       |       |        |        |        |       |        |         |        |        |        |       |       |       |
| 70.000  | 1.2017 | .5064 | .0627 | -.0007 | -.0833 |        |       | -.1571 | -.1721  | -.1934 | -.0776 | -.0131 | .0276 | .0253 |       |
| 90.000  |        |       | .0661 | -.0253 | -.1199 | -.1470 |       | -.1849 | -.1896  | -.2119 | -.0469 | .0024  | .0202 | .0583 |       |
| 105.000 |        |       | .1594 | -.0162 | -.1030 | -.1087 |       | -.1742 | -.2744  | -.2804 |        |        |       |       |       |
| 120.000 |        |       | .2240 | .0365  | -.0412 | -.0755 |       | -.1799 | -.3273  | -.7828 | -.0987 | .0116  | .0395 |       |       |
| 135.000 |        |       | .2642 | .0529  | -.0250 | -.0380 |       | -.1784 | -.4915  | -.7854 | -.1997 | .0204  | .0375 |       |       |
| 150.000 |        | .4152 | .3092 | .0890  | -.0141 | -.0230 |       | -.1851 | -.5651  | -.7878 | -.2137 | .0162  | .0220 |       |       |
| 165.000 |        |       | .3808 | .2083  | .0900  | .1316  |       | -.0200 | -.7529  |        |        |        |       |       |       |
| 180.000 |        |       | .4281 | .3260  | .2190  | .2593  |       | .4591  | -.9226  | -.9722 | -.1114 | .0171  | .0132 |       |       |
| PHI     |        |       |       |        |        |        |       |        | .0975   |        |        |        |       |       |       |
| 70.000  |        |       |       |        |        |        |       |        | .1840   |        |        |        |       |       |       |
| 90.000  |        |       |       |        |        |        |       |        |         | -.8786 | -.8771 | -.0650 | .0150 | .0089 |       |
| 105.000 |        |       |       |        |        |        |       |        |         |        |        |        |       |       |       |
| 120.000 |        |       |       |        |        |        |       |        |         |        |        |        |       |       |       |
| 135.000 |        |       |       |        |        |        |       |        |         |        |        |        |       |       |       |
| 150.000 |        |       |       |        |        |        |       |        |         |        |        |        |       |       |       |
| 174.000 |        |       |       |        |        |        |       |        |         |        |        |        |       |       |       |
| 180.000 | 1.2017 | .6871 | .4748 | .3626  | .2891  | .3409  | .7155 | .6143  | -1.0608 | -.8739 | -.0652 | .0159  | .0075 |       |       |

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| PHI     | .0000  | .0293  | -.0793 | -.1466 | -.2697 | -.2586 | -.1051 | .1100  | .3819 | .2205 | .0839 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|
| 70.000  |        |        |        |        |        |        |        |        |       |       |       |
| 90.000  | -.0421 |        |        | -.1357 | -.2430 | -.2837 | -.1318 | .0435  |       |       |       |
| 105.000 | -.1039 |        |        | -.0547 | .0337  | -.2725 | -.1173 | -.1278 |       |       |       |
| 120.000 | -.0569 | -.0982 | .0123  | .0468  | .0468  | -.3645 | -.1794 | -.1665 |       |       |       |
| 135.000 |        |        | .0742  | .0502  | -.0502 | -.5007 | -.1948 | -.2055 |       |       |       |
| 150.000 |        |        |        |        |        |        |        |        |       |       |       |
| 174.000 |        |        |        |        |        |        |        |        |       |       |       |
| 180.000 | -.0130 | -.0022 | .1295  | .0999  | .0999  | -.6285 | -.3207 | -.2861 |       |       |       |
| PHI     |        |        |        |        |        |        |        |        |       |       |       |
| 70.000  |        |        |        |        |        |        |        |        |       |       |       |
| 90.000  |        |        |        |        |        |        |        |        |       |       |       |
| 105.000 |        |        |        |        |        |        |        |        |       |       |       |
| 120.000 |        |        |        |        |        |        |        |        |       |       |       |
| 135.000 |        |        |        |        |        |        |        |        |       |       |       |
| 150.000 | .0134  | .0759  | .2638  | .4417  | -.3655 | -.2927 | -.1527 |        |       |       |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB11)

ALPHA ( 2 ) = .024 BETA ( 3 ) = 4.220

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .6520 | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| PHI     |       |       |       |       |       |       |       |       |        |        |
| 165.000 | .0117 | .2660 |       |       |       |       |       |       |        |        |
| 180.000 | .0104 | .0945 | .2901 | .4343 |       |       |       |       |        |        |

ALPHA ( 3 ) = 3.936 BETA ( 1 ) = -3.911 MACH = .89917 Q = 599.47 P = 1059.2 RN/L = 3.5758

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770 | .2040    | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|-------|----------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |        |        |       |        |       |          |        |        |        |        |       |
| .000    | 1.1999 | .6625 | .2110 | .1000 | .0131  |        |       | -.1003 |       | -.1081   | -.1271 | -.0810 | -.0030 | .0656  | .0814 |
| 20.000  |        |       | .2542 | .1056 | -.0077 | -.0737 |       | -.1120 |       | -.1259   |        |        |        |        |       |
| 40.000  |        |       | .4112 | .1604 | .0565  | -.0046 |       | -.0989 |       | -.1386   | -.1726 | -.0463 | .0144  | .0601  | .1016 |
| 55.000  |        |       | .4966 | .2753 | .1747  | .0865  |       | -.0182 |       | -.1151   |        |        |        |        |       |
| 70.000  |        |       | .5153 | .2939 | .1838  | .1308  |       | .0060  |       | -.1345   | -.5971 | -.1545 | -.0291 | .0256  |       |
| 90.000  |        | .6857 | .5233 | .3128 | .1921  | .1580  |       | .0165  |       | -.2057   | -.6302 | -.21   | -.0301 | .0171  |       |
| 120.000 |        |       | .4948 | .3273 | .2186  | .2575  |       | .2030  |       | -.2612   | -.8180 | -.3442 | -.0853 | -.0613 |       |
| 140.000 |        |       |       |       |        |        |       |        |       | -.3571   |        |        |        |        |       |
| 150.000 |        |       | .4172 | .2894 | .2052  | .2699  |       | .6041  |       | -.4608   | -.9241 | -.4363 | .0037  | -.0210 |       |
| 151.000 |        |       |       |       |        |        |       |        | .2744 |          |        |        |        |        |       |
| 162.000 |        |       |       |       |        |        |       |        | .3015 |          |        |        |        |        |       |
| 165.000 |        |       |       |       |        |        |       |        |       | -.9665   | -.8238 | -.4261 | .0337  | -.0093 |       |
| 169.000 |        |       |       |       |        |        |       |        |       |          |        |        |        |        |       |
| 174.000 |        |       |       |       |        |        |       |        |       |          |        |        |        |        |       |
| 180.000 | 1.1999 | .5723 | .3387 | .2613 | .1900  | .2591  | .7416 | .5400  |       | -.1.0873 | -.9390 | -.2852 | .0420  | -.0012 |       |

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

## PHI

| PHI     | .000   | .0524  | .0059  | -.0727 | -.1971 | -.2151 | -.1309 | .1058 |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|
| 40.000  | .0289  | -.0507 | -.1841 | -.2345 | -.1381 | -.0105 |        |       |
| 70.000  | -.2058 | -.0613 | .1430  | -.0138 | .0283  | -.0324 |        |       |
| 90.000  | -.1628 | -.3312 | .0260  | -.0661 | -.0322 | -.0951 |        |       |
| 105.000 |        | .1122  | .1865  | -.1543 | -.0844 | -.1337 |        |       |
| 110.000 |        |        |        |        |        |        | -.3911 |       |
| 120.000 | -.1755 | -.1208 | .2354  | .1775  | -.1354 | -.1276 | -.2773 |       |
| 135.000 |        | .2764  | .2432  | -.2438 | -.0949 | -.1117 |        |       |
| 150.000 | -.0744 | .0187  | .2645  | .1147  | -.1889 | -.0652 | -.0958 |       |
| 165.000 | -.0580 | .2379  |        | .0594  | -.0704 | -.3558 |        |       |
| 180.000 | -.0555 | .0253  | .2134  |        |        |        |        |       |

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TABULATED PRESSURE DATA - 0A148 ( AXES 11-073-1 )

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ALPHA ( 3 ) = 3.937 BETA ( 2 ) = .151 MACH = .89917 Q = 599.47 P = 1059.2 RVL = 3.5758  
 AXES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (XEBB11)

## SECTION ( 1 ) ORBITTER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770 | .2040  | .2510    | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|-------|--------|----------|--------|--------|--------|-------|
| PHI     | .000   | .6731 | .2207 | .1136 | .0208  |        |       | -.0929 |       | -.1071 | -.1410   | -.0600 | .0097  | .0747  | .0895 |
| 20.000  | 1.2094 |       | .2389 | .1040 | -.0117 | -.0611 |       | -.1007 |       | -.1176 |          |        |        |        |       |
| 40.000  |        |       | .3408 | .1321 | .0289  | -.0120 |       | -.0974 |       | -.1295 | -.1989   | -.0502 | .0251  | .0814  | .1148 |
| 55.000  |        |       | .3889 | .1801 | .0933  | .0291  |       | -.0770 |       | -.1604 |          |        |        |        |       |
| 70.000  |        |       | .3968 | .1836 | .0864  | .0575  |       | -.0725 |       | -.1981 | -.6624   | -.1449 | -.0319 | .0120  |       |
| 90.000  |        | .5405 |       | .2022 | .0324  | .0784  |       | -.0601 |       | -.2981 | -.7253   | -.1627 | -.0226 | .0125  |       |
| 120.000 |        |       | .4176 | .2523 | .1449  | .1928  |       | .1173  |       | -.3846 | -.6962   | -.2800 | -.0157 | -.0128 |       |
| 140.000 |        |       |       |       |        |        |       |        |       | -.5087 |          |        |        |        |       |
| 150.000 |        |       | .3875 | .2770 | .1801  | .2495  |       | .5191  |       | -.6755 | -.1.0297 | -.3750 | .0474  | .0072  |       |
| 151.000 |        |       |       |       |        |        |       |        | .1868 |        |          |        |        |        |       |
| 162.000 |        |       |       |       |        |        |       |        | .2417 |        |          |        |        |        |       |
| 165.000 |        |       |       |       |        |        |       |        |       | -.9735 | -.9417   | -.2142 | .0441  | .0129  |       |
| 169.000 |        |       |       |       |        |        |       |        |       |        |          |        |        |        |       |
| 174.000 |        |       |       |       |        |        |       |        |       |        |          |        |        |        |       |
| 180.000 |        |       |       |       |        |        |       |        |       |        |          |        |        |        |       |

X/LB

PHI

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|
| PHI     | .000   | .0027  | -.0679 | -.1985 | -.2193 | -.1320 | .1056  |        | .4567 | .2321 |       |       |       |       |       |
| 40.000  | .0471  |        | -.0523 | -.1796 | -.2322 | -.1382 | .0174  |        | .3361 | .1175 |       |       |       |       |       |
| 70.000  | -.2184 | -.4151 | -.0904 | .0763  | -.1053 | -.0359 | -.0766 |        |       |       |       |       |       |       |       |
| 90.000  | -.1632 | -.3019 | -.0043 | .0796  | -.1813 | -.0950 | -.1210 |        |       |       |       |       |       |       |       |
| 105.000 |        |        | .0730  | .0883  | -.2569 | -.1451 | -.1660 |        |       |       |       |       |       |       |       |
| 110.000 |        |        |        |        |        |        |        | -.3935 |       |       |       |       |       |       |       |
| 120.000 | -.1086 | -.1043 | .1354  | .2005  | -.4390 | -.2136 | -.1939 | -.2764 |       |       |       |       |       |       |       |
| 135.000 |        |        | .1881  | .4011  | -.3412 | -.1630 | -.1586 |        |       |       |       |       |       |       |       |
| 150.000 | -.0525 | -.0008 | .2116  | .4707  | -.2458 | -.1531 | -.1310 |        |       |       |       |       |       |       |       |
| 165.000 | -.0435 |        | .2187  |        | -.0790 | -.1660 | -.3552 |        |       |       |       |       |       |       |       |
| 180.000 | -.0412 | .0248  | .2284  | .4740  |        |        |        |        |       |       |       |       |       |       |       |

X/LB

ALPHA ( 3 ) = 3.940 BETA ( 3 ) = .4207 MACH = .89917 Q = 599.47 P = 1059.2 RVL = 3.5758

## SECTION ( 1 ) ORBITTER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770 | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|-------|--------|--------|--------|--------|-------|-------|
| PHI     | .000   | .6540 | .2086 | .1094 | .0100  |        |       | -.0927 |       | -.1106 | -.1359 | -.0732 | -.0021 | .0713 | .0741 |
| 20.000  | 1.1900 |       | .1998 | .0747 | -.0257 | -.0719 |       | -.0894 |       | -.1333 |        |        |        |       |       |
| 40.000  |        |       | .2520 | .0816 | -.0067 | -.0363 |       | -.1001 |       | -.1455 | -.2161 | -.0843 | .0100  | .0475 | .1030 |
| 55.000  |        |       | .2711 | .0875 | -.0062 | -.0317 |       | -.1260 |       | -.2046 |        |        |        |       |       |
| 70.000  |        |       | .2764 | .0737 | -.0081 | -.0089 |       | -.1364 |       | -.2630 | -.7251 | -.1513 | -.0285 | .0041 |       |
| 90.000  |        | .3791 |       | .0913 | -.0041 | .0065  |       | -.1366 |       | -.4071 | -.7978 | -.1627 | -.0096 | .0102 |       |
| 120.000 |        |       | .3557 | .1632 | .0635  | .1286  |       | .0134  |       | -.5258 | -.7756 | -.2974 | .0190  | .0064 |       |



DATE 10 FEB 76 TABULATED PRESSURE DATA - 0A149 ( AMES 11-073-1 )

(XEBB11)

AMES 11-073(0A149) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 7.890 BETA ( 1 ) = -3.900

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

180.000 1.1652 .4228 .2158 .1690 .1063 .2012 .4996 -.9299 -.7423 -.4901 -.1099 .0059

X/LB

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .1340 .0877 .0040 .1178 .1635 .1439 .1072 .5074 .2527

40.000

.1401 .0999 .0310 .0999 .1379 .1417 .0090 .4050 .1531

70.000

.3055 .5647 .1015 .1114 .0587 .0200 .0616

90.000

.2500 .4827 .0109 .0960 .1022 .0822 .1297

105.000

.0827 .0992 .1687 .1320 .1652

110.000

.1100 .0874 .2847 .1745 .1495

120.000

.2957 .2211 .1224 .0874 .2847 .1745 .1495

135.000

.1186 .1134 .2741 .0071 .0785 .3464

150.000

.1471 .0866 .1125 .1272 .3614

165.000

.1238 .0578 .1272 .3614

180.000

.1054 .0578 .1272 .3614

ALPHA ( 4 ) = 7.894 BETA ( 2 ) = .145 MACH = .89940 Q = 599.79 P = 1059.2 RNL = 3.5790

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.1755 .8131 .3655 .2233 .1269 .0286 .0113 -.0356 -.0506 .0463 .0463 .1241 .1485

20.000

.3793 .2165 .1022 .1367 .0542 .0026 -.0154 -.0506 .0459 .0459 .1081 .1801

40.000

.4441 .2386 .1367 .1305 .0591 .0310 .0310 .1109 .0447 .0447 .0459 .1081

55.000

.4295 .2264 .1305 .1305 .0591 .0310 .0310 .1109 .0447 .0447 .0459 .1081

70.000

.3953 .1989 .0977 .0710 .0388 .0388 .0388 .1552 .2268 .2268 .0899 .0126

90.000

.3805 .1834 .0903 .0868 .0868 .0868 .0868 .2509 .6990 .6990 .0813 .0134

120.000

.3742 .1849 .0934 .1732 .1355 .1355 .1355 .3643 .7146 .7146 .1086 .0560

140.000

.2780 .1684 .1013 .1990 .5034 .5034 .5034 .6548 .8325 .8325 .4568 .0219

150.000

.1762 .2090 .1762 .2090 .1762 .2090 .1762 .2090 .1762 .2090 .1762 .2090

162.000

.5620 .5620 .5620 .5620 .5620 .5620 .5620 .5620 .5620 .5620 .5620 .5620

165.000

.6737 .6737 .6737 .6737 .6737 .6737 .6737 .6737 .6737 .6737 .6737 .6737

174.000

.5402 .5402 .5402 .5402 .5402 .5402 .5402 .5402 .5402 .5402 .5402 .5402

180.000

.9990 .9990 .9990 .9990 .9990 .9990 .9990 .9990 .9990 .9990 .9990 .9990

PHI

.000 .1409 .0892 .0076 .1141 .1665 .1387 .1120 .5141 .2505

40.000

.1431 .0294 .0928 .1961 .1397 .0211 .3668 .1258



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB8111)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 7.892 BETA ( 3 ) = 4.207

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 -.1008 .1290  
180.000 -.1228 -.0755 .1240 .3601  
- .2165 -.4049 -.3766

ALPHA ( 5 ) = 11.932 BETA ( 1 ) = -3.884 MACH = .8987 Q = 599.34 P = 1059.7 RV/L = 3.5747

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0060 .0230 .0460 .0700 .1120 .1580 .1650 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.1031 .9293 .5011 .3396 .2307 .1369 .0715 .0484 .0259 .0456 .0990 .1765 .2115  
20.000 .5491 .3609 .2305 .1369 .0807 .0503 .0807 .0503 .0128 .0603 .1137 .1784 .2606  
40.000 .6174 .4022 .2677 .1943 .1149 .0568 .1149 .0568 .0188 .0603 .1137 .1784 .2606  
55.000 .5684 .3600 .2500 .1526 .0575 .0575 .0575 .0575 .0492 .2056 .1519 .0376  
70.000 .4488 .2987 .1841 .1503 .0492 .0492 .0492 .0492 .1380 .2500 .1842 .0601  
90.000 .4305 .2533 .1609 .1370 .0579 .0579 .0579 .0579 .1380 .2500 .1842 .0601  
120.000 .2955 .1476 .0569 .1396 .1856 .1856 .1856 .1856 .2528 .6715 .5347 .4259 .2605  
140.000 .1625 .0813 .0212 .1377 .5640 .5640 .5640 .5640 .3787 .5320 .5768 .5138 .2412 .0904  
150.000 .2378 .2407 .2407 .2407 .2407 .2407 .2407 .2407 .2407 .2407 .2407 .2407 .2407 .2407  
162.000 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600  
165.000 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600  
174.000 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600  
180.000 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600 .6600

X/LB

1.1031 .2572 .0953 .0732 .0221 .1472 .6600 .4593 .7344 .6155 .5601 .1980 .0081

PHI

.000 .2175 .1641 .0778 .0447 .1276 .1618 .0959 .5528 .2601  
40.000 .2398 .1091 .1091 .0187 .1872 .1469 .0060 .4191 .1452  
70.000 .4473 .7280 .1599 .0006 .2490 .1420 .1270 .1270 .1270  
90.000 .3437 .5721 .0446 .0467 .2599 .1943 .1734 .1734 .1734  
105.000 .0058 .0678 .0058 .0678 .3200 .2231 .2227 .2227 .2227  
110.000 .3760 .2460 .0212 .1462 .3843 .2441 .2094 .4053  
120.000 .2524 .2102 .0227 .2084 .3400 .2122 .2132 .3177  
135.000 .2524 .2102 .0227 .2084 .3400 .2122 .2132 .3177  
150.000 .2035 .2035 .0266 .2035 .2820 .2850 .2850 .2850  
165.000 .2035 .2035 .0266 .2035 .2820 .2850 .2850 .2850  
180.000 .2035 .2035 .0266 .2035 .2820 .2850 .2850 .2850





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TABULATED PRESSURE DATA - 0A148 ( AMES 1-073-1 )

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AMES 11-073(QA148) -140A/B/C R ORB FUSELAGE

(XEBB12) (05 AUG 75) (ZL DNY SO) (21003X)

## REFERENCE DATA

|       |   |           |         |      |   |           |     |    |
|-------|---|-----------|---------|------|---|-----------|-----|----|
| SREF  | = | 2690.0000 | 50. FT. | XMRP | = | 1076.6900 | IN. | X0 |
| LREF  | = | 474.8000  | IN.     | YMRP | = | .0000     | IN. | Y0 |
| BREF  | = | 938.0680  | IN.     | ZMRP | = | 375.0000  | IN. | Z0 |
| SCALE | = | .0300     |         |      |   |           |     |    |

## PARAMETRIC DATA

|          |        |          |        |
|----------|--------|----------|--------|
| RUDDER = | .000   | SPDRBK = | 85.000 |
| BOFLAP = | 22.500 | L-ELVN = | .000   |
| R-ELVN = | .000   | NACH =   | .600   |

ALPHA ( 1 ) = -4.057      BETA ( 1 ) = -7.689      MA<sup>2</sup> = .58836      Q = .593.96      P = 2385.7      RV/L = 4.8160

## SECTION 11 ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580 | .1860  | .1770 | .2040  | .2510  | .3010  | .3780  | .4870  | .5740  |
|---------|--------|-------|--------|--------|--------|--------|-------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |        |        |        |        |       |        |       |        |        |        |        |        |        |
| .000    | 1.0179 | .1340 | -.2157 | -.2144 | -.2184 |        |       | -.1828 |       | -.1491 | -.1263 | -.0822 | -.0731 | -.0605 | -.0760 |
| 20.000  |        |       | -.2003 | -.2300 | -.2774 | -.2829 |       | -.2407 |       | -.2002 |        |        |        |        |        |
| 40.000  |        |       | .0286  | -.2228 | -.2879 | -.3090 |       | -.3705 |       |        | -.2688 | -.1957 | -.1859 | -.1468 | -.1477 |
| 55.000  |        |       | .2819  | .0543  | -.0156 | -.1238 |       | -.1233 |       | -.1614 |        |        |        |        |        |
| 70.000  |        |       | .4534  | .2384  | .1571  | .0865  |       | -.0333 |       | -.1168 | -.1291 | .0008  | .0657  | .1081  |        |
| 90.000  |        | .7495 | .5538  | .3440  | .2443  | .1413  |       | -.0087 |       | -.1714 | -.1988 | -.0338 | .0428  | .0948  |        |
| 120.000 |        |       | .6257  | .4666  | .3512  | .3316  |       | .1954  |       | -.1852 | -.1807 | -.1633 | .0089  | .0466  |        |
| 140.000 |        |       |        |        |        |        |       |        |       | -.3538 | -.3087 | -.0994 | -.0336 | .0000  |        |
| 150.000 |        |       | .5758  | .4358  | .3528  | .3511  |       | .5695  | .2511 |        |        |        |        |        |        |
| 151.000 |        |       |        |        |        |        |       |        | .2606 |        |        |        |        |        |        |
| 162.000 |        |       |        |        |        |        |       |        |       |        |        |        |        |        |        |
| 165.000 |        |       |        |        |        |        |       |        |       |        |        |        |        |        |        |
| 169.000 |        |       |        |        |        |        |       |        |       |        |        |        |        |        |        |
| 174.000 |        |       |        |        |        |        |       | .5795  |       |        |        |        |        |        |        |
| 180.000 | 1.0179 | .7170 | .4418  | .3435  | .2796  | .2885  | .7069 |        |       | -.9367 | -.2353 | -.1237 | -.0548 | -.0152 |        |

| PHI     | X/LB   | .6520  | .7290  | .7790    | .8210  | .8790  | .9210  | .9500  | .9990  |
|---------|--------|--------|--------|----------|--------|--------|--------|--------|--------|
| .000    | -.1129 | -.1324 | -.1667 | -.2120   | -.2548 | -.3149 | -.3905 |        |        |
| 40.000  | -.2072 |        | -.1815 | -.2263   | -.2869 | -.3634 | -.4546 |        |        |
| 70.000  | .0269  | .0022  | .0819  | .1846    | .0353  | .0089  | -.0976 |        |        |
| 90.000  | .0548  | .0519  | .1373  | .2259    | .0118  | -.0545 | -.1462 |        |        |
| 105.000 |        |        | .1858  | .3438    | -.0913 | -.1016 | -.1911 |        |        |
| 110.000 |        |        |        | .110.000 |        |        |        |        |        |
| 120.000 | .0387  | .0910  | .2633  | .4946    | -.1271 | -.1144 | -.1568 |        | -.3704 |
| 135.000 |        |        | .2996  | .4963    | -.0690 | -.0367 | -.1369 |        | -.2715 |
| 150.000 | .0300  | .1005  | .2896  | .3433    | -.0388 | .0041  | -.0829 |        |        |
| 165.000 | .0138  |        | .2303  |          |        |        |        |        |        |
| 180.000 | -.0132 | .0594  | .1889  | .3954    |        | .1974  | .0283  | -.3184 |        |

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AVES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (XEBB12)

ALPHA (1) = -4.036 BETA (2) = -3.87 MACH = .59636 Q = 593.96 P = 2395.7 RN/L = 4.8160

SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB     | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770    | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|----------|--------|--------|--------|--------|-------|-------|
| PHI .000 | 1.0605 | .1733  | -.1791 | -.1875 | -.1955 | -.2428 | -.2005 | -.1362 | -.1096   | -.0758 | -.0563 | -.0427 | -.0636 |       |       |
| 20.000   |        | -.1677 | -.1934 | -.2436 | -.2611 | -.2611 | -.2975 | -.2664 | -.2027   | -.1358 | -.1088 | -.0997 | -.1058 |       |       |
| 40.000   |        | .0122  | -.1934 | -.2611 | -.2611 | -.1460 | -.1824 | -.1989 | -.1790   | -.0374 | .0373  | .0836  |        |       |       |
| 55.000   |        | .2061  | .0047  | -.0636 | -.0636 | .0073  | -.1083 | -.1864 | -.2191   | -.0892 | .0173  | .0572  |        |       |       |
| 70.000   |        | .3413  | .1352  | .0646  | .0646  | .0447  | -.0995 | -.2629 | -.2313   | -.1957 | .0003  | .0441  |        |       |       |
| 90.000   | .6110  | .4327  | .2224  | .1271  | .0447  | .2518  | .0831  | -.2324 | -.2712   | -.0868 | -.0152 | .0222  |        |       |       |
| 120.000  |        | .5356  | .3689  | .2620  | .2518  |        |        | -.2636 |          |        |        |        |        |       |       |
| 140.000  |        | .5458  | .4148  | .3336  | .3305  |        | .5083  | -.4107 |          |        |        |        |        |       |       |
| 150.000  |        |        |        |        |        |        |        | .1598  |          |        |        |        |        |       |       |
| 162.000  |        |        |        |        |        |        |        | .1958  |          |        |        |        |        |       |       |
| 165.000  |        |        |        |        |        |        | .5641  |        | -.9210   | -.2086 | -.0928 | -.0243 | .0144  |       |       |
| 174.000  |        |        |        |        |        |        |        |        |          |        |        |        |        |       |       |
| 180.000  | 1.0605 | .7378  | .4848  | .3852  | .3135  | .3196  | .6975  | .4702  | -.1.1500 | -.1956 | -.0914 | -.0343 | .0101  |       |       |
| X/LB     | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9800  | .9990  | 1.0180   | 1.0460 |        |        |        |       |       |

|          |        |        |        |        |        |        |        |        |       |       |  |  |  |  |  |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--|--|--|--|--|
| PHI .000 | -.1024 | -.1263 | -.1623 | -.2116 | -.1569 | -.1174 | .0359  |        | .3532 | .0897 |  |  |  |  |  |
| 40.000   | -.1749 | -.1673 | -.1673 | -.2183 | -.1938 | -.0982 | -.0347 |        | .2488 | .0244 |  |  |  |  |  |
| 70.000   | -.0006 | -.0312 | .0439  | .1361  | -.0127 | -.0294 | -.1210 |        |       |       |  |  |  |  |  |
| 90.000   | .0320  | .0246  | .0955  | .1605  | -.0710 | -.0968 | -.1698 |        |       |       |  |  |  |  |  |
| 105.000  |        |        | .1506  | .2309  | -.1702 | -.1491 | -.2164 |        |       |       |  |  |  |  |  |
| 110.000  |        |        |        |        |        |        |        | -.3769 |       |       |  |  |  |  |  |
| 120.000  | .0422  | .0877  | .2383  | .3577  | -.2155 | -.1857 | -.2275 | -.2903 |       |       |  |  |  |  |  |
| 135.000  |        |        | .3021  | .4521  | -.1342 | -.0870 | -.1723 |        |       |       |  |  |  |  |  |
| 150.000  | .0594  | .1247  | .3069  | .4478  | -.0774 | -.0572 | -.1107 |        |       |       |  |  |  |  |  |
| 165.000  | .0561  |        | .2635  |        | .1046  | -.0495 | -.3339 |        |       |       |  |  |  |  |  |
| 180.000  | .0318  | .1112  | .2529  | .5151  |        |        |        |        |       |       |  |  |  |  |  |

ALPHA (1) = -4.017 BETA (2) = .163 MACH = .59636 Q = 593.96 P = 2395.7 RN/L = 4.8160

SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB     | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| PHI .000 | 1.0713 | .1798  | -.1721 | -.1761 | -.1956 | -.2163 | -.1588 | -.1307 | -.1038 | -.0703 | -.0537 | -.0389 | -.0635 |       |       |
| 20.000   |        | -.1648 | -.1648 | -.1863 | -.2266 | -.2224 | -.1774 | -.1481 | -.1196 | -.0905 | -.0661 | -.0575 | -.0605 |       |       |
| 40.000   |        | .0221  | -.1919 | -.1919 | -.2278 | -.2224 | -.2441 | -.2196 | -.1523 | -.0905 | -.0661 | -.0575 | -.0605 |       |       |
| 55.000   |        | .1228  | -.0565 | -.1059 | -.1059 | .1705  | -.2027 | -.2230 | -.2170 | -.0666 | .0079  | .0592  |        |       |       |
| 70.000   |        | .2568  | .0346  | -.0346 | -.0346 | -.0678 | -.1800 | -.2439 | -.2619 | -.0666 | .0079  | .0592  |        |       |       |
| 90.000   | .4569  | .3066  | .1019  | .0094  | -.0554 | -.0554 | -.1893 | -.3506 | -.2619 | -.0666 | .0079  | .0592  |        |       |       |
| 120.000  |        | .4223  | .2604  | .1492  | .1443  |        | -.0478 | -.3447 | -.2814 | -.2427 | -.0339 | .0171  |        |       |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB12)

ALPHA ( 1 ) = -4.017 BETA ( 3 ) = .163

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040   | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|---------|--------|--------|--------|-------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |         |        |        |        |       |       |
| 140.000 |        |       |       |       |       |       |       |       |        |         |        |        |        |       |       |
| 150.000 |        |       |       |       |       |       |       |       |        |         |        |        |        |       |       |
| 151.000 |        |       |       |       |       |       |       |       |        |         |        |        |        |       |       |
| 162.000 |        |       |       |       |       |       |       |       |        |         |        |        |        |       |       |
| 165.000 |        |       |       |       |       |       |       |       |        |         |        |        |        |       |       |
| 169.000 |        |       |       |       |       |       |       |       |        |         |        |        |        |       |       |
| 174.000 |        |       |       |       |       |       |       |       |        |         |        |        |        |       |       |
| 180.000 | 1.0713 | .7288 | .4980 | .4016 | .3291 | .3345 | .6878 | .5162 |        | -1.1349 | -.1835 | -.0852 | -.0179 | .0201 |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460  |        |        |        |       |       |

| PHI     | .000  | .000  | .000  | .000  | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
|---------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|
| 40.000  |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |
| 70.000  |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |
| 90.000  |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |
| 105.000 |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |
| 110.000 |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |
| 120.000 |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |
| 135.000 |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |
| 150.000 |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |
| 165.000 |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |
| 180.000 | .0523 | .1341 | .2808 | .5485 |      |      |      |      |      |      |      |      |      |      |      |

ALPHA ( 1 ) = -4.026 BETA ( 4 ) = 4.234 MACH = .59636 Q = 593.86 P = 2385.7 RV/L = 4.8160

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 20.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 55.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 163.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8812)

ALPHA ( 1 ) = -4.026 BETA ( 4 ) = 4.234

SECTION ( 1 ) ORBITTER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

180.000 1.0497 .7069 .4902 .3856 .3145 .3229 .4927 -1.1237 -.1906 -.0936 -.0301 .0071

X/LB

.5520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 -1.038 -.1279 -.1622 -.2117 -.1582 -.1189 -.350 .3451 .0916  
40.000 -1.310 -.1560 -.2030 -.1947 -.1023 -.0166 .2362 -.0075

70.000

-.0337 -.0827 -.0356 .0406 -.1025 -.0961 -.1562

90.000

-.0029 -.0297 .0171 .0325 -.1750 -.1660 -.2085

105.000

.0510 .0510 .0413 -.3143 -.2327 -.2610

110.000

-.3910

120.000

-.0093 -.0098 .0702 .0738 -.4488 -.3680 -.3650

135.000

.1805 .3225 -.3336 -.2382 -.2741

150.000

.0331 .0758 .2162 .4918 -.2331 -.2211 -.2018

165.000

.0352 .2731

180.000

.0346 .1146 .2613 .5077

ALPHA ( 1 ) = -4.040 BETA ( 5 ) = 8.307 MACH = .59636 Q = 593.96 P = 2385.7 RW/L = 4.8160

SECTION ( 1 ) ORBITTER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.0015 .1347 -.2020 -.1972 -.2323 -.2104 -.1786 -.1553 -.1285 -.0948 -.0692 -.0578 -.0794

20.000

-.1894 -.1934 -.1934 -.2345

40.000

-.1241 -.2116 -.2299 -.1952

55.000

-.0514 -.1701 -.1968 -.2077

70.000

-.0031 -.1522 -.1927 -.1886

90.000

.1062 .0515 -.1376 -.2035 -.2229

120.000

.1592 -.0011 -.1118 -.1016

140.000

.2973 .2255 .1182 .1069

150.000

-.2611

162.000

-.1700

165.000

.3753

169.000

.5483

174.000

.3975

180.000

.9990 1.0180 1.0460

X/LB

.6520 .7530 .7790 .8210 .8790 .9210 .9600

PHI

1.0015 .6336 .4387 .3315 .2668 .2781

.000

.3310 .0811

40.000

-.1154 -.1306 -.1680 -.2129 -.1588 -.1154 .0348

.000

-.1123 -.1540 -.1925 -.1893 -.1110 -.0157

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TABULATED PRESSURE DATA - CA148 ( AMES 11-073-1 )

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AMES 11-07310A148) -140A/B/C/R ORB FUSELAGE

(XEBB12)

ALPHA ( 1 ) = -4.040 BETA ( 5 ) = 8.307

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| 70.000  | -.0546 | -.1131 | -.0818 | .0078  | -.1369 | -.1106 | -.1612 |        |        |        |
| 90.000  | -.0327 | -.0711 | -.0498 | -.0158 | -.2117 | -.1898 | -.2129 |        |        |        |
| 105.000 |        |        | -.0062 | .0079  | -.3597 | -.2614 | -.2701 |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.3658 |        |        |
| 120.000 | -.0405 | -.0627 | -.0261 | -.1302 | -.5938 | -.4617 | -.4190 | -.3695 |        |        |
| 135.000 |        |        | .0702  | .1536  | -.4788 | -.3419 | -.3382 |        |        |        |
| 150.000 | -.0268 | -.0053 | .1131  | .4402  | -.4189 | -.3466 | -.2778 |        |        |        |
| 165.000 | -.0230 | .1380  | .1380  |        | -.2428 | -.3263 | -.3505 |        |        |        |
| 180.000 | -.0191 | .0558  | .1960  | .3875  |        |        |        |        |        |        |

ALPHA ( 2 ) = .047 BETA ( 1 ) = -7.924 MACH = .59654 Q = 594.31 P = 2385.7 RVL = 4.8134

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580 | .1660  | .1770    | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|--------|--------|--------|--------|-------|--------|----------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |        |        |        |        |       |        |          |        |        |        |        |        |       |
| 20.000  | 1.0460 | .3277 | -.0613 | -.1117 | -.1316 |        |       | -.1368 | -.1174   | -.1017 | -.0722 | -.0523 | -.0215 | -.0230 |       |
| 40.000  |        |       | -.0175 | -.0947 | -.1701 | -.1980 |       | -.1749 | -.1512   | -.1476 | -.0907 | -.0714 | -.0821 | -.0504 |       |
| 55.000  |        |       | .2094  | -.0357 | -.1278 | -.1581 |       | -.2264 | -.2054   |        |        |        |        |        |       |
| 70.000  |        |       | .4080  | .1955  | .1122  | .0212  |       | -.0139 | -.0851   |        |        |        |        |        |       |
| 90.000  |        | .7381 | .5104  | .2947  | .2041  | .1365  |       | -.0148 | -.0925   | -.1331 | -.0179 | .0301  | .0516  |        |       |
| 100.000 |        |       | .5568  | .3496  | .2430  | .1663  |       | .0202  | -.1562   | -.1588 | -.0528 | .0148  | .0409  |        |       |
| 120.000 |        |       | .5584  | .3680  | .2923  | .2824  |       | .1742  | -.1735   | -.2248 | -.2151 | -.0669 | -.0434 |        |       |
| 140.000 |        |       | .4525  | .3195  | .2470  | .2512  |       | .5128  | -.4658   | -.4068 | -.1521 | -.0800 | -.0556 |        |       |
| 150.000 |        |       |        |        |        |        |       | .1890  |          |        |        |        |        |        |       |
| 162.000 |        |       |        |        |        |        |       | .1713  |          |        |        |        |        |        |       |
| 165.000 |        |       |        |        |        |        |       |        | -.1.1259 | -.2547 | -.1654 | -.0917 | -.0573 |        |       |
| 174.000 |        |       |        |        |        |        |       |        |          |        |        |        |        |        |       |
| 180.000 | 1.0460 | .5851 | .3232  | .2465  | .1864  | .2066  | .6610 | .3009  | -.1.3634 | -.2654 | -.1602 | -.0922 | -.0630 |        |       |

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|
| PHI     |        |        |        |        |        |        |        |       |        |        |
| 40.000  | -.0554 | -.0826 | -.1238 | -.1761 | -.1368 | -.1081 | .0404  | .3894 | .0990  |        |
| 70.000  | -.1073 | -.1262 | -.1810 | -.1810 | -.1697 | -.0948 | -.0456 | .2509 | .0454  |        |
| 90.000  | -.0828 | -.0704 | .0380  | .1805  | .0354  | .0177  | -.0852 |       |        |        |
| 100.000 | -.0380 | -.0177 | .0982  | .2225  | -.0043 | -.0503 | -.1474 |       |        |        |
| 110.000 |        |        | .1450  | .3506  | -.0800 | -.0966 | -.1867 |       |        |        |
| 120.000 | -.0707 | .0107  | .2107  | .4916  | -.1523 | -.1225 | -.1620 |       |        |        |
| 135.000 |        |        | .2514  | .4375  | -.1201 | -.0697 | -.1598 |       |        |        |
| 150.000 | -.0354 | .0452  | .2404  | .2558  | -.1141 | -.0366 | -.1044 |       |        |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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ALPHA ( 2 ) = .047 BETA ( 1 ) = -7.92%

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB12)

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|--------|-------|-------|-------|-------|--------|--------|-------|--------|--------|
| PHI     |        |       |       |       |       |        |        |       |        |        |
| 165.000 | -.0351 |       | .1887 |       | .1523 | -.0020 | -.3223 |       |        |        |
| 180.000 | -.0510 | .0234 | .1588 | .3226 |       |        |        |       |        |        |

ALPHA ( 2 ) = .057 BETA ( 2 ) = -3.897 MACH = .59654 Q = 594.31 P = 2385.7 RV/L = 4.8134

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770   | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |        |        |        |        |        |        |         |        |        |        |        |        |       |
| 20.000  | 1.0845 | .3679 | -.0263 | -.0815 | -.1108 | -.1625 | -.1780 | -.1225 | -.1014  | -.0829 | -.0517 | -.0287 | -.0041 | -.0149 |       |
| 40.000  |        |       | .0043  | -.0676 | -.1394 | -.1315 | -.1418 | -.1216 | -.1216  | -.1123 | -.0570 | -.0418 | -.0368 | -.0254 |       |
| 55.000  |        |       | .1871  | -.0361 | -.1113 | -.1315 | -.1780 | -.1675 | -.1675  | -.1123 | -.0570 | -.0418 | -.0368 | -.0254 |       |
| 70.000  |        |       | .3239  | .1242  | .0498  | -.0227 | -.0937 | -.0937 | -.1328  | -.1760 | -.0251 | -.0003 | -.0284 |        |       |
| 90.000  |        | .6076 | .3978  | .1931  | .1108  | .0536  | -.0677 | -.0677 | -.1575  | -.2121 | -.0859 | -.0110 | -.0249 |        |       |
| 120.000 |        |       | .4458  | .2411  | .1380  | .0765  | -.0608 | -.0608 | -.2361  | -.2121 | -.0859 | -.0110 | -.0249 |        |       |
| 140.000 |        |       | .4762  | .3222  | .2186  | .2226  | .0851  | .0851  | -.3371  | -.2587 | -.2210 | -.0465 | -.0150 |        |       |
| 150.000 |        |       | .4339  | .3102  | .2384  | .2533  | .4651  | .4651  | -.5075  | -.3466 | -.1296 | -.0516 | -.0182 |        |       |
| 162.000 |        |       |        |        |        |        |        | .1065  |         |        |        |        |        |        |       |
| 165.000 |        |       |        |        |        |        |        | .1184  |         |        |        |        |        |        |       |
| 169.000 |        |       |        |        |        |        |        | .5052  |         |        |        |        |        |        |       |
| 174.000 |        |       |        |        |        |        |        | .3975  |         |        |        |        |        |        |       |
| 180.000 | 1.0845 | .6005 | .3607  | .2778  | .2133  | .2389  | .6424  |        | -1.1007 | -.2625 | -.1303 | -.0530 | -.0182 |        |       |

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| 40.000  | -.0444 | -.0761 | -.1183 | -.1749 | -.1361 | -.1044 | .0508  |        |        |        |
| 70.000  | -.0873 | -.1185 | -.1185 | -.1759 | -.1715 | -.0797 | -.0334 | .3622  | .0964  |        |
| 90.000  | -.1078 | -.1118 | -.0108 | .1308  | .0111  | -.0256 | -.1129 | .2854  | .0361  |        |
| 105.000 | -.0611 | -.0437 | .0628  | .1531  | -.0711 | -.0952 | -.1688 |        |        |        |
| 110.000 |        |        | .1136  | .2420  | -.1599 | -.1452 | -.2203 |        |        |        |
| 120.000 | -.0341 | .0278  | .2102  | .3621  | -.2214 | -.1798 | -.2088 | -.3683 |        |        |
| 135.000 |        |        | .2656  | .3989  | -.1787 | -.1168 | -.1888 | -.2862 |        |        |
| 150.000 | .0032  | .0759  | .2684  | .3207  | -.1416 | -.0859 | -.1296 |        |        |        |
| 165.000 | .0102  |        | .2303  | .0649  | -.0657 | -.3306 |        |        |        |        |
| 180.000 | -.0025 | .0803  | .2232  | .4308  |        |        |        |        |        |        |

DATE 10 FEB 76 TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

ALPHA ( 2 ) = .058 BETA ( 3 ) = .160 MACH = .59654 Q = 594.31 P = 2385.7 RN/L = 4.8134 (XEB812)

| SECTION ( 1 ) ORBITER FUSELAGE |        |       |        |        |        |        |        |          |          |
|--------------------------------|--------|-------|--------|--------|--------|--------|--------|----------|----------|
| DEPENDENT VARIABLE CP          |        |       |        |        |        |        |        |          |          |
| X/LB                           | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580  | .1660    | .1770    |
| PHI                            | 1.0898 | .3737 | -.0261 | -.0629 | -.1056 | -.1433 | -.1164 | -.0864   | -.0864   |
| 20.000                         |        |       | -.0052 | -.0596 | -.1297 | -.1210 | -.1234 | -.1073   | -.1073   |
| 40.000                         |        |       | .1270  | -.0479 | -.1111 | -.1210 | -.1488 | -.1424   | -.1424   |
| 55.000                         |        |       | .2322  | .0529  | -.0095 | -.0716 | -.1335 | -.1731   | -.1731   |
| 70.000                         |        |       | .2783  | .0892  | .0098  | -.0211 | -.1342 | -.2173   | -.2173   |
| 90.000                         | .4532  |       | .3234  | .1263  | .0381  | -.0106 | -.1507 | -.2546   | -.2546   |
| 120.000                        |        |       | .3768  | .2248  | .1261  | .1382  | -.0266 | -.3538   | -.3538   |
| 140.000                        |        |       |        |        |        |        | .3761  | -.4063   | -.4063   |
| 150.000                        |        |       | .3898  | .2865  | .2045  | .2180  |        | -.5657   | -.5657   |
| 162.000                        |        |       |        |        |        |        |        | -.0104   | -.0104   |
| 165.000                        |        |       |        |        |        |        |        | .0308    | .0308    |
| 169.000                        |        |       |        |        |        |        |        |          |          |
| 174.000                        |        |       |        |        |        |        |        |          |          |
| 30.000                         | 1.0898 | .5987 | .3801  | .2896  | .2210  | .2547  | .6314  | -.1.0839 | -.1.0839 |
| X/LB                           | .6520  | .7290 | .7790  | .8210  | .8790  | .9210  | .9600  | -.1.2928 | -.1.2928 |
| PHI                            |        |       |        |        |        |        |        | 1.0460   | 1.0460   |
| 40.000                         |        |       |        |        |        |        |        |          |          |
| 70.000                         |        |       |        |        |        |        |        | .3730    | .3730    |
| 90.000                         |        |       |        |        |        |        |        | .2488    | .2488    |
| 105.000                        |        |       |        |        |        |        |        |          |          |
| 110.000                        |        |       |        |        |        |        |        |          |          |
| 120.000                        |        |       |        |        |        |        |        |          |          |
| 135.000                        |        |       |        |        |        |        |        |          |          |
| 150.000                        |        |       |        |        |        |        |        |          |          |
| 165.000                        |        |       |        |        |        |        |        |          |          |
| 180.000                        |        |       |        |        |        |        |        |          |          |

| SECTION ( 1 ) ORBITER FUSELAGE |        |       |        |        |        |        |        |        |        |
|--------------------------------|--------|-------|--------|--------|--------|--------|--------|--------|--------|
| DEPENDENT VARIABLE CP          |        |       |        |        |        |        |        |        |        |
| X/LB                           | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  |
| PHI                            | 1.0746 | .3469 | -.0430 | -.0784 | -.1174 | -.1424 | -.1237 | -.1069 | -.1069 |
| 20.000                         |        |       | -.0318 | -.0830 | -.1424 | -.1273 | -.1285 | -.1142 | -.1142 |
| 40.000                         |        |       | .0546  | -.0830 | -.1276 | -.1273 | -.1477 | -.1434 | -.1434 |
| 55.000                         |        |       | .1170  | -.0286 | -.0754 | -.1204 | -.1694 | -.2066 | -.2066 |
| 70.000                         |        |       | .1593  | -.0131 | -.0747 | -.0885 | -.1958 | -.2702 | -.2702 |
| 90.000                         | .2901  |       | .2001  | .0100  | -.0620 | -.0980 | -.2275 | -.2856 | -.2856 |
| 121.000                        |        |       | .2718  | .1243  | .0293  | .0348  | -.1504 | -.4378 | -.4378 |

| SECTION ( 1 ) ORBITER FUSELAGE |        |       |        |        |        |        |        |        |        |
|--------------------------------|--------|-------|--------|--------|--------|--------|--------|--------|--------|
| DEPENDENT VARIABLE CP          |        |       |        |        |        |        |        |        |        |
| X/LB                           | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  |
| PHI                            | 1.0746 | .3469 | -.0430 | -.0784 | -.1174 | -.1424 | -.1237 | -.1069 | -.1069 |
| 20.000                         |        |       | -.0318 | -.0830 | -.1424 | -.1273 | -.1285 | -.1142 | -.1142 |
| 40.000                         |        |       | .0546  | -.0830 | -.1276 | -.1273 | -.1477 | -.1434 | -.1434 |
| 55.000                         |        |       | .1170  | -.0286 | -.0754 | -.1204 | -.1694 | -.2066 | -.2066 |
| 70.000                         |        |       | .1593  | -.0131 | -.0747 | -.0885 | -.1958 | -.2702 | -.2702 |
| 90.000                         | .2901  |       | .2001  | .0100  | -.0620 | -.0980 | -.2275 | -.2856 | -.2856 |
| 121.000                        |        |       | .2718  | .1243  | .0293  | .0348  | -.1504 | -.4378 | -.4378 |

ALPHA ( 2 ) = .052 BETA ( 4 ) = 4.215 MACH = .59654 Q = 594.31 P = 2385.7 RN/L = 4.8134

**DATE 10 FEB 76**

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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ALPHA ( 2 ) = .052 BETA ( 4 ) = 4.215

AMES 11-073(0A148) -140A1/3/C/R ORB FUSELAGE

(21883X)

## SECTION 11 ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0705 | .1120 | .1580 | .1660 | .1770  | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|---------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |         |        |        |        |        |       |
| 140.000 |        |       |       |       |       |       |       |       |        |         |        |        |        |        |       |
| 150.000 |        |       |       |       |       |       |       |       |        |         |        |        |        |        |       |
| 151.000 |        |       | .3233 | .2350 | .1515 | .1557 |       | .2678 |        | -.4820  |        |        |        |        |       |
| 162.000 |        |       |       |       |       |       |       |       | -.1392 | -.6237  | -.2854 | -.1314 | -.0551 | -.0207 |       |
| 165.000 |        |       |       |       |       |       |       |       | -.0842 |         |        |        |        |        |       |
| 169.000 |        |       |       |       |       |       |       |       |        | -1.0775 | -.2420 | -.1268 | -.0548 | -.0198 |       |
| 174.000 |        |       |       |       |       |       |       | .4094 |        |         |        |        |        |        |       |
| 174.000 |        |       |       |       |       |       | .5646 |       |        |         |        |        |        |        |       |
| 180.000 | 1.0746 | .5712 | .3725 | .2763 | .2235 | .2433 |       | .4256 |        | -1.2856 | -.2336 | -.1202 | -.0559 | -.0226 |       |

**B7/x**

二五

|         |        |        |        |        |        |        |
|---------|--------|--------|--------|--------|--------|--------|
| -.000   | -.0731 | -.1205 | -.1779 | -.1336 | -.1046 | .0500  |
| 40.000  | -.0565 | -.1458 | -.1662 | -.1736 | -.0967 | -.0090 |
| 70.000  | .1382  | -.0757 | .0160  | -.1138 | -.1012 | -.1607 |
| 90.000  | -.0838 | -.0929 | -.0188 | .0161  | -.1726 | -.2075 |
| 105.000 |        | .0250  | .0250  | -.3083 | -.2331 | -.2656 |
| 110.000 |        |        |        |        |        |        |
| 120.000 | -.0437 | -.0314 | .0749  | -.4301 | -.3376 | -.3270 |
| 135.000 |        |        | .1705  | -.3499 | -.2443 | -.2709 |
| 150.000 | .0010  | .0512  | .2020  | -.2910 | -.2430 | -.2149 |
| 165.000 | .0086  |        | .1949  | -.1503 | -.2621 | -.3573 |
| 180.000 | -.0040 | .0787  | .2235  | .4273  |        |        |

ALPHA ( 2 ) = .048    BETA ( 5 ) = 8.271    MACH    Q = .59654    P = 594.31    A/V = 2385.7    A/L = 4.8134

## SECTION ( ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1560 | .1860  | .1770  | .2040   | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|--------|--------|--------|--------|-------|--------|--------|---------|--------|--------|--------|--------|--------|
| PHI     |        |       |        |        |        |        |       |        |        |         |        |        |        |        |        |
| .000    | 1.5203 | .3209 | -.0530 | -.0940 | -.1394 |        |       | -.1385 |        | -.1241  | -.1004 | -.0688 | -.0442 | -.0220 | -.0338 |
| 20.000  |        |       | -.0632 | -.1048 | -.1570 | -.1575 |       | -.1408 |        | -.1357  |        |        |        |        |        |
| 40.000  |        |       | -.0238 | -.1105 | -.1504 | -.1480 |       | -.1508 |        | -.1568  |        | -.0520 | -.0287 | -.0237 | .0088  |
| 55.000  |        |       |        | -.1032 | -.1381 | -.1615 |       | -.1988 |        | -.2303  |        |        |        |        |        |
| 70.000  |        |       | .0428  | -.1048 | -.1475 | -.1489 |       | -.2404 |        | -.3015  | -.2567 | -.1173 | -.0454 | -.0013 |        |
| 90.000  | .1004  |       | .0703  | -.0993 | -.1589 | -.1720 |       | -.2820 |        | .4417   | .3013  | .1314  | .0324  | -.0006 |        |
| 120.000 |        |       | -.1395 | .0048  | -.0917 | -.0724 |       | -.2830 |        | -.5233  | -.3686 | -.2805 | -.0682 | -.0308 |        |
| 140.000 |        |       |        |        |        |        |       |        |        | -.5529  |        |        |        |        |        |
| 150.000 |        | .2194 |        | .1555  | .0575  | .0648  |       | .1264  |        | -.6862  | -.2915 | -.1547 | -.0873 | -.0566 |        |
| 151.000 |        |       |        |        |        |        |       |        | -.2932 |         |        |        |        |        |        |
| 162.000 |        |       |        |        |        |        |       |        | -.2386 |         |        |        |        |        |        |
| 165.000 |        |       |        |        |        |        |       |        |        | -1.1130 | -.2671 | -.1556 | -.0913 | -.0666 |        |
| 169.000 |        |       |        |        |        |        |       | .3234  |        |         |        |        |        |        |        |
| 174.000 |        |       |        |        |        |        | .5020 |        |        |         |        |        |        |        |        |

**0205.**



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(X28812)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 3 ) = 3.956 BETA ( 1 ) = -7.937

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |       |        |        |        |        |        |        |
| 70.000  | -.1956 | -.1401 | -.0033 | .1750 | .0427  | .0296  | -.0742 |        |        |        |
| 90.000  | -.1364 | -.0834 | .0614  | .2256 | .0075  | -.0491 | -.1447 |        |        |        |
| 105.000 |        |        | .1025  | .3798 | -.0630 | -.0853 | -.1869 |        |        |        |
| 110.000 |        |        |        |       |        |        | -.3503 |        |        |        |
| 120.000 | -.1886 | -.0754 | .1477  | .5160 | -.1773 | -.1362 | -.1605 | -.2620 |        |        |
| 135.000 |        |        | .2019  | .3822 | -.1681 | -.0999 | -.1800 |        |        |        |
| 150.000 | -.0908 | -.0054 | .2036  | .1385 | -.1865 | -.0809 | -.1304 |        |        |        |
| 165.000 | -.0786 |        | .1621  |       | .1262  | -.0257 | -.3158 |        |        |        |
| 180.000 | -.0768 | .0037  | .1355  | .2444 |        |        |        |        |        |        |

ALPHA ( 3 ) = 3.958 BETA ( 2 ) = -3.898 MACH = .5950 Q = 595.02 P = 2385.7 RN/L = 4.8206

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |        |        |       |        |        |        |        |        |        |        |       |
| 20.000  | 1.0775 | .5332 | .1218 | .0208 | -.0227 | -.0749 |       | -.0691 | -.0618 | -.0729 | -.0459 | -.0219 | .0012  | .0395  | .0416 |
| 40.000  |        |       | .1605 | .0471 | -.0355 | -.0286 |       | -.0829 | -.0824 | -.0824 | -.0368 | .0047  | .0214  | .0236  | .0563 |
| 55.000  |        |       | .3201 | .0990 | .0209  | -.0460 |       | -.0772 | -.0933 | -.0933 |        |        |        |        |       |
| 70.000  |        |       | .4053 | .2126 | .1321  | .0774  |       | -.0353 | -.1455 | -.1455 | -.1913 | -.0853 | -.0350 | -.0167 |       |
| 90.000  |        | .5774 | .4238 | .2260 | .1319  | .0774  |       | -.0448 | -.2250 | -.2250 | -.2139 | -.1129 | -.0477 | -.0253 |       |
| 120.000 |        |       | .4236 | .2410 | .1443  | .0891  |       | -.0429 | -.2879 | -.2879 | -.2976 | -.2753 | -.1184 | -.0979 |       |
| 140.000 |        |       | .3560 | .2510 | .1600  | .1762  |       | .0765  | -.4032 | -.4032 |        |        |        |        |       |
| 150.000 |        |       | .3147 | .2105 | .1376  | .1800  |       | .4269  | -.6022 | -.6022 | -.4148 | -.1698 | -.0831 | -.0558 |       |
| 162.000 |        |       |       |       |        |        |       |        | .0960  | .0960  |        |        |        |        |       |
| 165.000 |        |       |       |       |        |        |       |        | .0470  | .0470  |        |        |        |        |       |
| 169.000 |        |       |       |       |        |        |       |        |        |        |        |        |        |        |       |
| 174.000 |        |       |       |       |        |        |       |        |        |        |        |        |        |        |       |
| 180.000 |        |       |       |       |        |        |       |        |        |        |        |        |        |        |       |

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

|         |        |        |        |        |        |        |        |        |  |  |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--|--|--|--|--|--|--|
| 40.000  | .0211  | -.0125 | -.0636 | -.1341 | -.1048 | -.0843 | .0613  |        |  |  |  |  |  |  |  |
| 70.000  | .0073  | -.0570 | -.0570 | -.1265 | -.1515 | -.0637 | -.0187 |        |  |  |  |  |  |  |  |
| 90.000  | -.2264 | -.1817 | -.0455 | .1210  | -.0108 | -.0151 | -.1000 |        |  |  |  |  |  |  |  |
| 105.000 | -.1545 | -.1165 | .0221  | .1522  | -.0653 | -.0905 | -.1694 |        |  |  |  |  |  |  |  |
| 110.000 |        |        | .0768  | .2588  | -.1426 | -.1379 | -.2137 |        |  |  |  |  |  |  |  |
| 120.000 | -.1318 | -.0365 | .1831  | .3337  | -.2399 | -.1812 | -.1973 | -.3562 |  |  |  |  |  |  |  |
| 135.000 |        |        | .2320  | .3209  | -.2163 | -.1390 | -.2042 | -.2857 |  |  |  |  |  |  |  |
| 150.000 | -.0436 | .0423  | .2363  | .2217  | -.1928 | -.1201 | -.1572 |        |  |  |  |  |  |  |  |

.3967 .1069

.3079 .0387

-1.2509 -.2983 -.1582 -.0777 -.0467

-1.4726 -.2633 -.1429 -.0658 -.0432

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8812)

ALPHA ( 3 ) = 3.958 BETA ( 2 ) = -3.898

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 -.0282 .1984 .0248 -.1102 -.3262  
180.000 -.0362 .0560 .1911 .3562

ALPHA ( 3 ) = 3.957 BETA ( 3 ) = .162 MACH = .59690 Q = 595.02 P = 2385.7 RN/L = 4.8208

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.0833 .5343 .1229 .0356 -.0185 -.0846 -.0573 -.0419 -.0139 .0090 .0412 .0478  
.20.000 .1381 .0546 -.0311 -.0695 -.0688 -.0723  
.40.000 .2443 .0742 -.0064 -.0357 -.0734 -.0846 -.0507 -.0010 .0188 .0309 .0650  
.55.000 .2946 .1216 .0464 -.0115 -.0931 -.1425  
.70.000 .2993 .1228 .0413 .0051 -.1181 -.2060 -.2255 -.1151 -.0643 -.0353  
.90.000 .3107 .1316 .0534 .0094 -.1235 -.3011 -.2558 -.1298 -.0610 -.0373  
120.000 .3135 .1771 .0882 .1167 -.0175 -.43663  
140.000 .2848 .1962 .1151 .1569 .3362 -.6379 -.3514 -.1463 -.0610 -.0326  
151.000  
162.000  
165.000  
169.000  
174.000  
180.000+.0515  
+.0346

-1.2242 -2722 -.1384 -.0541 -.0271

-1.4299 -2571 -.1262 -.0548 -.0245

X/LB 1.0833 .4516 .2585 .1814 .1316 .1788 .5760 .3800 .9990 1.0180 1.0460

PHI

.000 .0207 -.0148 -.0654 -.1313 -.1031 -.0874 .0624  
.40.000 .0166 -.0514 -.1248 -.1523 -.12701 -.0701 -.0001  
70.000 -.2399 -.2068 -.0812 -.0653 -.0684 -.0624 -.1323  
90.000 -.1630 -.1283 -.0020 .0754 -.1451 -.1394 -.1888  
105.000 .0653 .0991 -.2201 -.1828 -.2358  
110.000  
120.000  
135.000  
150.000  
165.000  
180.000-.3632  
-.2863.3974 .1094  
.2716 .0205  
-.2411  
-.2241  
-.1843  
-.1873  
-.3218  
-.4459



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TABULATED PRESSURE DATA - 0A148 ( ANES 11-073-1 )

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ALPHA ( 3 ) = 3.960 BETA ( 5 ) = 8.252

ANES 11-07310A148 - 140A/B/C/R ORB FUSELAGE

(XEBB12)

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1860 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 1.0102  | .3541 | .2082 | .1298 | .0823 | .1285 | .4530 |       |       |       |       |       |       |       |       |       |
| .6520   | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 |       |       |       |       |       |       |       |       |       |

## PHI

|         |        |        |        |        |        |        |        |  |  |  |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--|--|--|--|--|--|--|--|
| .000    | .3052  | -.0186 | -.0668 | -.1324 | -.1100 | -.0918 | .0588  |  |  |  |  |  |  |  |  |
| 40.000  | .0164  | -.0580 | -.1181 | -.1580 | -.1580 | -.0830 | -.0002 |  |  |  |  |  |  |  |  |
| 70.000  | -.2481 | -.2484 | -.1525 | -.0356 | -.1558 | -.1274 | -.1675 |  |  |  |  |  |  |  |  |
| 90.000  | -.1724 | -.1736 | -.0913 | -.0495 | -.2399 | -.2081 | -.2263 |  |  |  |  |  |  |  |  |
| 105.000 |        |        | -.0420 | -.0389 | -.3464 | -.2613 | -.2701 |  |  |  |  |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        |  |  |  |  |  |  |  |  |
| 120.000 | -.0955 | -.0865 | .0101  | -.0565 | -.5126 | -.3979 | -.3549 |  |  |  |  |  |  |  |  |
| 135.000 |        |        | .0818  | .1077  | -.4795 | -.3359 | -.3247 |  |  |  |  |  |  |  |  |
| 150.000 | -.0578 | -.0171 | .1067  | .2896  | -.4796 | -.3826 | -.2971 |  |  |  |  |  |  |  |  |
| 165.000 | -.0640 |        | .1032  |        | -.3540 | -.3950 | -.3402 |  |  |  |  |  |  |  |  |
| 180.000 | -.0853 | -.0033 | .1377  | .2632  |        |        |        |  |  |  |  |  |  |  |  |

ALPHA ( 4 ) = 7.904 BETA ( 1 ) = -7.922 MACH = .59690 Q = 595.02 P = 2385.7 RNL = 4.8202

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700  | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |        |       |       |       |       |       |       |       |       |       |       |
| 20.000  |       |       |       |       |        |       |       |       |       |       |       |       |       |       |       |
| 40.000  |       |       |       |       |        |       |       |       |       |       |       |       |       |       |       |
| 55.000  |       |       |       |       |        |       |       |       |       |       |       |       |       |       |       |
| 70.000  |       |       |       |       |        |       |       |       |       |       |       |       |       |       |       |
| 90.000  |       |       |       |       |        |       |       |       |       |       |       |       |       |       |       |
| 120.000 |       |       |       |       |        |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |        |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |        |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |        |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |        |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |        |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |        |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |        |       |       |       |       |       |       |       |       |       |       |
| 1.9999  | .6486 | .2327 | .1114 | .0578 | -.0103 |       |       |       |       |       |       |       |       |       |       |
| .3083   | .4876 | .2626 | .2633 | .1586 | .0893  |       |       |       |       |       |       |       |       |       |       |
| .5540   | .5272 | .3420 | .2402 | .1565 | .1562  |       |       |       |       |       |       |       |       |       |       |
| .4845   | .3579 | .2163 | .1227 | .1422 |        |       |       |       |       |       |       |       |       |       |       |
| .1962   | .0950 | .0428 | .1034 |       |        |       |       |       |       |       |       |       |       |       |       |
| .3950   |       |       |       |       |        |       |       |       |       |       |       |       |       |       |       |
| .5596   |       |       |       |       |        |       |       |       |       |       |       |       |       |       |       |

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

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TABULATED PRESSURE DATA - OA148 ( AVES 11-073-1 )

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ALPHA ( 4 ) = 7.904 BETA ( 1 ) = -7.922

(XEBB12)

AVES 11-07310A148) -140A/B/C/R ORB FUSELAGE

## SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770   | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|-------|-------|
| PHI     |        |        |        |        |        |        |        |        |         |        |        |        |        |       |       |
| 180.000 | .9999  | .2837  | .0840  | .0497  | .0118  | .0706  |        | .1719  | -1.7438 | -.3104 | -.1759 | -.1109 | -.0952 |       |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180  | 1.0460 |        |        |        |       |       |
| PHI     |        |        |        |        |        |        |        |        |         |        |        |        |        |       |       |
| .000    | .0791  | .0377  | -.0139 | -.0858 | -.0759 | -.0643 | .0759  |        | .4421   | .1189  |        |        |        |       |       |
| 40.000  | .0943  |        | -.0566 | -.0682 | -.1174 | -.0253 | -.0102 |        | .3315   | .0592  |        |        |        |       |       |
| 70.000  | -.3017 | -.2042 | -.0324 | .1761  | .0516  | .0383  | -.0640 |        |         |        |        |        |        |       |       |
| 90.000  | -.2303 | -.1473 | .0285  | .2240  | .0163  | .0412  | -.1359 |        |         |        |        |        |        |       |       |
| 105.000 |        |        | .0616  | .3910  | -.0504 | -.0823 | -.1831 |        |         |        |        |        |        |       |       |
| 110.000 |        |        |        |        |        |        |        | -.3437 |         |        |        |        |        |       |       |
| 120.000 | -.3342 | -.1638 | .0788  | .5383  | -.2049 | -.1514 | -.1688 | -.2953 |         |        |        |        |        |       |       |
| 135.000 |        |        | .1517  | .3382  | -.2236 | -.1388 | -.2074 |        |         |        |        |        |        |       |       |
| 150.000 | -.1395 | -.0398 | .1656  | -.0486 | -.2469 | -.1027 | -.1514 |        |         |        |        |        |        |       |       |
| 165.000 | -.1114 |        | .1379  |        | .1116  | -.0388 | -.3206 |        |         |        |        |        |        |       |       |
| 180.000 | -.1061 | -.0176 | .1191  | .1389  |        |        |        |        |         |        |        |        |        |       |       |

ALPHA ( 4 ) = 7.913 BETA ( 2 ) = -3.891 MACH = .99630 Q = 595.02 P = 2385.7 RN/L = 4.8202

## SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580 | .1680  | .1770    | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|--------|--------|--------|--------|-------|--------|----------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |        |        |        |        |       |        |          |        |        |        |        |        |       |
| .000    | 1.0331 | .6870 | .2648  | .1442  | .0751  | .0098  |       | -.0097 | -.0067   | -.0007 | .0245  | .0511  | .0677  | .0892  |       |
| 20.000  |        |       | .3163  | .1720  | .0715  | .0098  |       | -.0066 | -.0114   | -.0088 | .0116  | .0556  | .0735  | .0844  | .1325 |
| 40.000  |        |       | .4305  | .2239  | .1310  | .0730  |       | .0105  | -.0088   | -.0088 | .0116  | .0556  | .0735  | .0844  | .1325 |
| 55.000  |        |       | .4464  | .2615  | .1753  | .0821  |       | -.0090 | -.0774   | -.0774 | .0116  | .0556  | .0735  | .0844  | .1325 |
| 70.000  |        |       | .4165  | .2351  | .1389  | .0849  |       | -.0301 | -.1404   | -.1404 | -.2071 | -.1187 | -.0784 | -.0646 |       |
| 90.000  |        | .5174 | .3823  | .2086  | .1270  | .0835  |       | -.0394 | -.2230   | -.2230 | -.2339 | -.1410 | -.0830 | -.0819 |       |
| 120.000 |        |       | .3000  | .1625  | .0824  | .1128  |       | .0474  | -.3200   | -.3200 | -.3532 | -.3524 | -.2191 | -.2125 |       |
| 140.000 |        |       |        |        |        |        |       |        | -.4595   | -.4595 | -.4742 | -.1972 | -.1096 | -.0953 |       |
| 150.000 |        |       | .1889  | .1065  | .0455  | .1030  |       | .3819  | -.0002   | -.0002 | -.4742 | -.1972 | -.1096 | -.0953 |       |
| 151.000 |        |       |        |        |        |        |       |        | -.0268   | -.0268 | -.3273 | -.1741 | -.0941 | -.0756 |       |
| 163.000 |        |       |        |        |        |        |       | .3883  |          |        | -.3273 | -.1741 | -.0941 | -.0756 |       |
| 165.000 |        |       |        |        |        |        |       |        |          |        |        |        |        |        |       |
| 174.000 |        |       |        |        |        |        | .5474 |        |          |        |        |        |        |        |       |
| 180.000 | 1.0331 | .2950 | .1163  | .0770  | .0334  | .0983  |       | .2682  | -.1.6117 | -.2812 | -.2812 | -.1449 | -.0748 | -.0568 |       |
| X/LB    | .6520  | .7290 | .7790  | .8210  | .8790  | .9210  | .9600 | .9990  | 1.0180   | 1.0460 |        |        |        |        |       |
| PHI     |        |       |        |        |        |        |       |        |          |        |        |        |        |        |       |
| .000    | .0061  | .0445 | -.0109 | -.0854 | -.0709 | -.0637 | .0779 |        | .4335    | .1198  |        |        |        |        |       |
| 40.000  | .0375  |       | .0067  | -.0667 | -.1154 | -.0342 | .0046 |        | .3191    | .0470  |        |        |        |        |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEBB12)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 7.913 BETA ( 2 ) = -3.891

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0480

PHI

|         |        |        |        |       |        |        |        |
|---------|--------|--------|--------|-------|--------|--------|--------|
| 70.000  | -.3378 | -.2517 | -.0853 | .1181 | -.0044 | -.0039 | -.0896 |
| 90.000  | -.2527 | -.1778 | -.0135 | .1517 | -.0556 | -.0850 | -.1574 |
| 105.000 |        |        | .0390  | .2653 | -.1293 | -.1343 | -.2119 |
| 110.000 |        |        |        |       |        |        | -.3463 |
| 120.000 | -.2334 | -.0769 | .1717  | .1975 | -.2554 | -.1903 | -.1901 |
| 135.000 |        |        | .2033  | .1676 | -.2413 | -.1592 | -.2083 |
| 150.000 | -.0929 | .0136  | .2068  | .1326 | -.2196 | -.1436 | -.1691 |
| 165.000 | -.0715 |        | .1661  |       | -.0178 | -.1198 | -.3118 |
| 180.000 | -.0660 | .0266  | .1576  | .3179 |        |        |        |

ALPHA ( 4 ) = 7.912 BETA ( 3 ) = .160 MACH = .59590 Q = 595.02 P = 2385.7 RV/L = 4.8202

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

|         |        |       |       |       |       |       |        |         |        |        |        |        |       |
|---------|--------|-------|-------|-------|-------|-------|--------|---------|--------|--------|--------|--------|-------|
| .000    | 1.0450 | .6845 | .2685 | .1524 | .0746 |       | -.0033 | -.0087  | .0053  | .0250  | .0528  | .0914  | .1020 |
| 20.000  |        |       | .2848 | .1479 | .0620 | .0072 | -.0118 | -.0149  | -.0448 | .0209  | .0521  | .0585  | .1301 |
| 40.000  |        |       | .3465 | .1698 | .0884 | .0385 | -.0582 | -.0463  | -.1463 |        |        |        |       |
| 55.000  |        |       | .3244 | .1555 | .0770 | .0029 | -.0808 | -.2007  | -.2507 | -.1492 | -.1056 | -.0839 |       |
| 70.000  |        |       | .2900 | .1258 | .0410 | .0050 | -.1031 | -.2899  | -.2714 | -.1647 | -.1021 | -.0828 |       |
| 90.000  | .3681  |       | .2765 | .1127 | .0486 | .0091 | -.1153 | -.3955  | -.3559 | -.3057 | -.1473 | -.1303 |       |
| 120.000 |        |       | .2334 | .1060 | .0320 | .0719 | -.0254 | -.5201  |        |        |        |        |       |
| 140.000 |        |       |       |       |       |       | .2996  | -.7168  | -.4017 | -.1630 | -.0801 | -.0654 |       |
| 150.000 |        |       | .1750 | .1063 | .0332 | .0895 |        | -.0874  |        |        |        |        |       |
| 151.000 |        |       |       |       |       |       |        | -.1000  |        |        |        |        |       |
| 164.000 |        |       |       |       |       |       | .3553  | -1.3435 | -.2958 | -.1456 | -.0842 | -.0469 |       |
| 165.000 |        |       |       |       |       |       |        |         |        |        |        |        |       |
| 169.000 |        |       |       |       |       |       | .5186  |         |        |        |        |        |       |
| 174.000 |        |       |       |       |       |       |        |         |        |        |        |        |       |
| 180.000 | 1.0450 | .2967 | .1399 | .0936 | .0524 | .1111 | .3184  | -1.5455 | -.2707 | -.1395 | -.0635 | -.0488 |       |

X/LB

PHI

|         |        |        |        |        |        |        |        |
|---------|--------|--------|--------|--------|--------|--------|--------|
| .000    | .0684  | .0504  | -.0093 | -.0856 | -.0665 | -.0619 | .0772  |
| 40.000  | .0920  |        | .0047  | -.0697 | -.1168 | -.0429 | .0159  |
| 70.000  | -.3539 | -.2738 | -.1187 | .0561  | -.0706 | -.0590 | -.1273 |
| 90.000  | -.2564 | -.1888 | -.0306 | .0769  | -.1397 | -.1384 | -.1869 |
| 105.000 |        |        | .0488  | .1069  | -.2107 | -.1825 | -.2366 |
| 110.000 |        |        |        |        |        |        | -.3565 |
| 120.000 | -.1579 | -.0554 | .1161  | .1129  | -.2305 | -.2286 | -.2270 |
| 135.000 |        |        | .1341  | .2708  | -.2816 | -.1963 | -.2345 |
| 150.000 | -.0676 | .0007  | .1634  | .4088  | -.2563 | -.1906 | -.1879 |



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140/B/C/R ORB FUSELAGE

(X28812)

ALPHA ( 4 ) = 7.909 BETA ( 5 ) = 8.236 MACH = .59690 Q = 595.02 P = 2385.7 RN/L = 4.8202

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230  | .0460  | .0700  | .1120  | .1580 | .1660  | .1770   | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|-------|-------|--------|--------|--------|--------|-------|--------|---------|--------|--------|--------|--------|-------|-------|
| PHI     | .000  | .9887 | .6312  | .2287  | .1204  | .0405  |       | -.0225 | -.0260  | -.0186 | .0070  | .0348  | .0743  | .0775 |       |
| 20.000  |       | .1787 |        | .0662  | -.0050 | -.0336 |       | -.0594 | -.0681  | -.0581 |        |        |        |       |       |
| 40.000  |       | .1256 |        | .0183  | -.0519 | -.0835 |       | -.1158 | -.1587  | -.1600 | -.0828 | -.0309 | .0148  | .0803 |       |
| 55.000  |       | .0590 |        | -.0719 | -.1186 | -.1681 |       | -.2229 | -.2675  |        |        |        |        |       |       |
| 70.000  |       | .0327 |        | -.0836 | -.1382 | -.1234 |       | -.2178 | -.3012  | -.3019 | -.1816 | -.1369 | -.1130 |       |       |
| 90.000  | .0227 | .0483 |        | -.0870 | -.1227 | -.1270 |       | -.2352 | -.4044  | -.3038 | -.1707 | -.1050 | -.0872 |       |       |
| 120.000 |       | .0609 | -.0415 | -.1117 | -.0549 |        |       | -.2053 | -.5125  | -.3574 | -.2414 | -.0683 | -.0554 |       |       |
| 140.000 |       |       |        |        |        |        |       |        | -.5145  |        |        |        |        |       |       |
| 150.000 |       | .0561 | .0186  | -.0527 | -.0090 |        |       | .0817  | -.7785  | -.3239 | -.1559 | -.0742 | -.0609 |       |       |
| 151.000 |       |       |        |        |        |        |       |        | -.3378  |        |        |        |        |       |       |
| 162.000 |       |       |        |        |        |        |       |        | -.3233  |        |        |        |        |       |       |
| 165.000 |       |       |        |        |        |        |       | .2358  | -1.3008 | -.2924 | -.1678 | -.0895 | -.0754 |       |       |
| 169.000 |       | .9687 | .1948  | .1005  | .0383  | -.0072 | .0664 | .4021  | -1.5417 | -.3170 | -.1914 | -.1138 | -.0980 |       |       |
| 174.000 |       | .6520 | .7290  | .7790  | .8210  | .8790  | .9210 | .9600  |         |        |        |        |        |       |       |
| 180.000 |       |       |        |        |        |        |       |        | 1.0180  | 1.0460 |        |        |        |       |       |

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|
| PHI     | .000   | .0687  | .0380  | -.0155 | -.0923 | -.0749 | -.0680 | .0686  | .4397 | .1037 |       |       |       |       |       |
| 40.000  |        | .0732  |        | .0038  | -.0664 | -.1370 | -.0567 | .0056  | .2709 | .0066 |       |       |       |       |       |
| 70.000  |        | -.3624 | -.3213 | -.1976 | -.0690 | -.1617 | -.1276 | -.1640 |       |       |       |       |       |       |       |
| 90.000  |        | -.2583 | -.2352 | -.1449 | -.0682 | -.2430 | -.1931 | -.2059 |       |       |       |       |       |       |       |
| 105.000 |        |        | -.0970 | -.0110 | -.0110 | -.3779 | -.2678 | -.2767 |       |       |       |       |       |       |       |
| 110.000 |        |        |        |        |        |        |        |        |       |       |       |       |       |       |       |
| 120.000 | -.1396 | -.1421 | -.0497 | .1896  | -.5118 | -.3799 | -.3230 |        |       |       |       |       |       |       |       |
| 135.000 |        | .0561  | .3190  | .3190  | -.4754 | -.3422 | -.3245 |        |       |       |       |       |       |       |       |
| 150.000 | -.0861 | -.0352 | .0915  | .1155  | -.4681 | -.3843 | -.2982 |        |       |       |       |       |       |       |       |
| 165.000 | -.0906 |        | .0952  |        | -.3849 | -.4013 | -.3446 |        |       |       |       |       |       |       |       |
| 180.000 | -.1107 | -.0177 | .1258  | .1741  |        |        |        |        |       |       |       |       |       |       |       |

ALPHA ( 5 ) = 11.950 BETA ( 1 ) = -7.879 MACH = .59660 Q = 594.43 P = 2385.7 RN/L = 4.8162

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|-------|
| PHI     | .000  | .9306 | .7763 | .3737 | .2302 | .1524 |       | .0451 | .0407  | .0436  | .0657  | .0902  | .1419  | .1557 |       |
| 20.000  |       | .4574 |       | .2913 | .2913 | .1791 |       | .0670 | .0576  |        |        |        |        |       |       |
| 40.000  |       | .5939 |       | .3807 | .2698 | .1939 |       | .1170 | .0828  | .0982  | .1360  | .1520  | .1694  | .2169 |       |
| 55.000  |       | .5803 |       | .3903 | .3903 | .2910 |       | .0760 | -.0120 |        |        |        |        |       |       |
| 70.000  |       | .4959 |       | .3213 | .2106 | .1570 |       | .0369 | -.0832 | -.1789 | -.1131 | -.0921 | -.0509 |       |       |
| 90.000  | .5531 | .4076 |       | .2572 | .2037 | .1213 |       | .0196 | -.1763 | -.2200 | -.1653 | -.1364 | -.1364 |       |       |
| 120.000 |       | .2282 | .0904 | .0138 | .0448 |       |       | .0403 | -.3185 | -.4311 | -.5811 | -.4862 | -.4958 |       |       |

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TABULATED PRESSURE DATA - QAI48 ( AMES 11-073-1 )

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ALPHA ( 5 ) = 11.950 BETA ( 1 ) = -7.879

AMES 11-073(QAI48) -140A/B/C/R ORB FUSELAGE

(XE8812)

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

X/LB

PHI

40.000

70.000

90.000

105.000

110.000

120.000

135.000

150.000

165.000

180.000

ALPHA ( 5 ) = 11.968

BETA ( 2 ) = -3.871

MACH = .59660

Q

P = 594.43

P = 2385.7

RM/L

= 4.8162

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| .000    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 20.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 55.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

.4944

AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

**(2103X)**

|  | ALPHA ( 5 ) = | BETA ( 2 ) = |
|--|---------------|--------------|
|  | 11.958        | -3.871       |

## SECTION 1: ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

[illegible]
$$\text{ALPHA} ( 5 ) = 11.970 \quad \text{BETA} ( 3 ) =$$

## SECTION 11 ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460  | .0700  | .1120  | .1580 | .1860  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|-------|-------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |       |       |       |        |        |        |       |        |        |        |        |        |        |        |       |
| .000    | .9664 | .8245 | .4140 | .2704  | .1856  |        |       | .0691  |        | .0586  | .0631  | .0866  | .1163  | .1580  | .1576 |
| 20.000  |       |       | .4209 | .2650  | .1655  | .0955  |       | .0608  |        | .0410  |        |        |        |        |       |
| 40.000  |       |       | .4271 | .2581  | .1627  | .0984  |       | .0398  |        | -.0141 | -.0174 | .0404  | .0834  | .1172  | .1926 |
| 55.000  |       |       | .3293 | .1577  | .0735  | -.0192 |       | -.1032 |        | .1680  |        |        |        |        |       |
| 70.000  |       |       | .2600 | .0988  | .0177  | .0001  |       | -.1097 |        | -.2150 | -.2836 | -.1987 | -.1596 | -.1565 |       |
| 90.000  | .2825 |       | .2182 | .0754  | .0301  | -.0111 |       | -.1099 |        | -.3038 | -.2938 | -.2118 | -.1577 | -.1523 |       |
| 120.000 |       |       | .1339 | .0232  | -.0407 | .0139  |       | -.0430 |        | -.4249 | -.4752 | -.3873 | -.2428 | -.2211 |       |
| 140.000 |       |       |       |        |        |        |       |        |        | -.5659 |        |        |        |        |       |
| 150.000 |       |       | .0551 | .0110  | -.0476 | .0329  |       | .2716  |        | -.7935 | -.4435 | -.1887 | -.1012 | -.1001 |       |
| 151.000 |       |       |       |        |        |        |       |        | -.1306 |        |        |        |        |        |       |
| 162.000 |       |       |       |        |        |        |       |        | -.1611 |        |        |        |        |        |       |
| 165.000 |       |       |       |        |        |        |       |        |        |        |        |        |        |        |       |
| 169.000 |       |       |       |        |        |        |       |        |        |        |        |        |        |        |       |
| 174.000 |       |       |       |        |        |        |       |        |        |        |        |        |        |        |       |
| 180.000 | .9664 | .1190 | .0093 | -.0042 | -.0281 | .0462  | .4611 | .2966  |        |        | -.3176 | -.1551 | -.0763 | -.0711 |       |
| X/LB    | .6520 | .7290 | .7790 | .8210  | .8790  | .9210  | .9600 | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |       |       |       |        |        |        |       |        |        |        |        |        |        |        |       |
| .000    | .1593 | .1200 | .0577 | -.0263 | -.0288 | -.0325 | .1012 | .2581  |        | -.1718 | -.2777 | -.1405 | -.0692 | -.0666 |       |
| 40.000  | .1748 |       | .0712 | -.0131 | -.0862 | -.0097 | .0412 |        |        |        |        |        |        |        |       |
|         |       |       |       |        |        |        |       |        | .4611  | .1357  |        |        |        |        |       |
|         |       |       |       |        |        |        |       |        | .3192  | .0488  |        |        |        |        |       |

DATE 10 FEB 76 TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB12)

ALPHA ( 5 ) = 11.970 BETA ( 3 ) = .156

SECTION ( 1 ) ORBITER FUSELAGE  
 X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI  
 70.000 -.4974 -.3621 -.1780 .0171 -.0893 -.0637 -.1195  
 90.000 -.3567 -.2596 -.0804 .0453 -.1517 -.1270 -.1765  
 105.000 .0166 .0958 -.2283 -.1823 -.2304  
 110.000  
 120.000 -.2071 -.0999 .0734 .1691 -.2845 -.2387 -.2288  
 135.000 .0534 .0534 .3136 -.2997 -.2181 -.2421  
 150.000 -.1395 -.0592 .1246 .4923 -.2658 -.2019 -.1887  
 165.000 -.0844 .1428 .1255 -.2178 -.3092  
 180.000 -.0815 .0092 .1595 .4937

ALPHA ( 5 ) = 11.968 BETA ( 4 ) = 4.216 MACH = .59660 Q = 594.43 P = 2385.7 RV/L = 4.8182

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI  
 20.000 .9475 .8006 .3939 .2535 .1655 .0680  
 40.000 .3642 .2284 .1269 .0680  
 55.000 .3077 .1717 .0782 .0186  
 70.000 .1950 .0342 .0390 .1161  
 90.000 .1349 .0035 .0667 .0711  
 110.000 .1169 .1105 .0130 .0490 .0694  
 120.000 .0687 .0335 .0824 .0147  
 140.000 .0286 -.0133 -.0681 .0132  
 150.000  
 162.000  
 165.000  
 169.000  
 174.000  
 180.000

X/LB

PHI

40.000 .1585 .1143 .0528 .0231 -.0268 -.0326 .0993  
 70.000 .1650 .0626 .0192 -.0959 -.0256 .0401  
 90.000 -.4904 .3823 .2095 .0409 .1426 .1078 .1463  
 105.000 -.3578 .2900 .1186 .0614 .2225 .1779 .2005  
 120.000 .0656 .0235 .5338 .2340 .2503  
 140.000  
 150.000  
 160.000  
 170.000  
 180.000

PHI  
 40.000 .4623 .1330  
 70.000 .3013 .0286  
 90.000  
 105.000  
 120.000  
 135.000  
 150.000

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TABULATED PRESSURE DATA - 0A148 ( AXES 11-073-1 )

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AXES 11-073(0A148) -142A/B/C/R ORB FUSELAGE

(XEB812)

ALPHA ( 5 ) = 11.968 BETA ( 4 ) = 4.216

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 -.0809 .1241 -.2333 -.2981 -.3084  
180.000 -.0998 -.0082 .1232 .4654

ALPHA ( 5 ) = 11.959 BETA ( 5 ) = 8.279 MACH = .59560 Q = 594.43 P = 2385.7 RV/L = 4.8162

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 .8918 .7657 .3718 .2277 .1325 .0851 .0365 .0459  
20.000 .2999 .1697 .0951 .0591 .0128 -.0783 -.0057  
40.000 .1712 .0591 .0128 -.0783 -.0057  
55.000 .0312 -.1040 .1569 .2245 .2688  
70.000 .0011 -.1013 .1609 .1367 .2243  
90.000 .0025 -.030 .1342 .1255 .2264  
120.000 -.0101 -.956 -.1388 -.0576 .1881  
140.000 .0000  
150.000 -.0402 -.0553 -.1102 -.0350 .0657  
151.000  
162.000  
165.000  
169.000  
174.000  
180.000

-.3804

-.3659

-.1.3486 -.3045 -.1641 -.0914 -.1014

.1847

.3471

-.1.7804 -.3233 -.1928 -.1296 -.1364

PHI

.000 .1414 .1152 .0469 -.0282 -.0254 -.0316 .0990  
40.000 .1395 .0545 -.0192 -.1009 -.0381 .0257  
70.000 -.4935 -.4024 -.2502 -.1256 -.1945 -.1502 -.1681  
90.000 -.3633 -.3250 -.2102 -.1363 .2758 .2010 .1958  
105.000 .1556 .1211 .4418 .2926 .2840  
110.000  
120.000  
135.000  
150.000  
165.000  
180.000

-.3654

-.3010

.3405

.3197

.3009

.4137

.3377

.1671

DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
AMES 11-073(0A148) - 140A/3/C/R ORB FUS

(XEPB13) ( 05 AUG 75 )  
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## REFERENCE DATA

|       |   |           |        |      |   |           |     |    |
|-------|---|-----------|--------|------|---|-----------|-----|----|
| SHF   | = | 2690.0000 | SO.FT. | XMRP | = | 1076.6800 | IN. | XO |
| LRF   | = | 474.8000  | IN.    | YMRP | = | .0000     | IN. | YC |
| BRF   | = | 936.0560  | IN.    | ZMRP | = | 375.0000  | IN. | ZO |
| SCALE | = | .0300     |        |      |   |           |     |    |

## PARAMETRIC DATA

|          |      |          |        |
|----------|------|----------|--------|
| RUDDER = | .000 | SPOBRK = | 35.000 |
| BOFLAP = | .000 | L-ELVN = | .000   |
| R-ELVN = | .000 | NACH     | 1.400  |

```

SCALE = .0300
ALPHA ( 1 ) = -.4.105      BETA ( 1 ) = -3.886      PACH = 1.39+6      Q = 589.93      P = 440.65      RN/L = 2.9118

```

## SECTION C ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

[illegible]

|         |      |        |        |        |        |
|---------|------|--------|--------|--------|--------|
| PH1     | .000 | -.0199 | -.0213 | -.0393 | -.0951 |
|         |      | -.0656 |        | -.0761 | -.1060 |
| 40.000  |      | .0836  | .0160  | -.0417 | -.2003 |
| 70.000  |      | .0933  | .0566  | .0626  | .1979  |
| 90.000  |      |        |        | .2087  | .2384  |
| 105.000 |      |        |        |        |        |
| 110.000 |      | .0377  | .0609  | .3576  | .2898  |
| 120.000 |      |        |        | .4039  | .4200  |
| 135.000 |      |        |        | .3974  | .4161  |
| 150.000 |      | -.0950 | .0462  | .3805  |        |
| 165.000 |      | -.0138 |        |        |        |
| 180.000 |      | -.0194 | .0183  | .3771  | .4510  |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB8813)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 1 ) = -4.030 BETA ( 2 ) = .154 MACH = 1.3946 Q = 599.93 P = 440.65 RN/L = 2.9118

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230  | .0460 | .0700 | .1120 | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|--------|--------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | 1.4784 | .6752  | .2110 | .0883 | .0177 |        | -.0583 | -.0291 | .0009  | -.0130 | -.0408 | -.0484 | -.0523 |       |
| 20.000  |       |        |        | .2459 | .0922 | .0091 | -.0497 | -.0519 | -.0430 | -.1144 | -.1045 | -.0601 | -.0748 | -.0416 |       |
| 40.000  |       |        |        | .3882 | .1130 | .0528 | -.0461 | -.0599 | .0334  | .0769  | -.2404 | -.1643 | -.1042 | .0090  |       |
| 55.000  |       |        |        | .5052 | .2324 | .1695 | .0426  | .1527  | -.0084 | -.2369 | -.2378 | -.1253 | -.0051 | -.0515 |       |
| 70.000  |       |        |        | .5804 | .3062 | .2226 | .1297  | .2010  | .0484  | -.1812 | -.4018 | -.1757 | -.0515 |        |       |
| 90.000  |       | .7979  |        | .6418 | .3807 | .2321 | .1633  | .4591  | -.0690 | -.2961 | -.1804 | -.1358 | -.0719 |        |       |
| 120.000 |       | .7177  |        | .5223 | .3583 | .3823 |        |        | -.1659 |        |        |        |        |        |       |
| 140.000 |       | .7430  |        | .8115 | .4551 | .5126 |        | .9291  | .6535  |        |        |        |        |        |       |
| 150.000 |       |        |        |       |       |       |        |        | .7385  |        |        |        |        |        |       |
| 151.000 |       |        |        |       |       |       |        |        |        |        |        |        |        |        |       |
| 162.000 |       |        |        |       |       |       |        |        |        | -.1500 | -.2739 | -.1427 | -.1204 | -.0767 |       |
| 165.000 |       |        |        |       |       |       |        |        |        |        |        |        |        |        |       |
| 169.000 |       |        |        |       |       |       |        |        |        |        |        |        |        |        |       |
| 174.000 |       |        |        |       |       |       |        |        |        |        |        |        |        |        |       |
| 180.000 |       | 1.4784 | 1.0116 | .7382 | .6065 | .4905 | .5580  | 1.0912 | 1.0228 | -.2903 | -.2991 | -.1068 | -.1147 | -.0771 |       |
| X/LB    | .6520 | .7290  | .7790  | .8210 | .8790 | .9210 | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |

## PHI

| X/LB    | .000 | .0390 | .0571 | .3002 | .1382 | .0229 | -.1137 | -.1232 |
|---------|------|-------|-------|-------|-------|-------|--------|--------|
| 40.000  |      |       |       |       |       |       |        |        |
| 70.000  |      |       |       |       |       |       |        |        |
| 90.000  |      |       |       |       |       |       |        |        |
| 105.000 |      |       |       |       |       |       |        |        |
| 110.000 |      |       |       |       |       |       |        |        |
| 120.000 |      |       |       |       |       |       |        |        |
| 135.000 |      |       |       |       |       |       |        |        |
| 150.000 |      |       |       |       |       |       |        |        |
| 165.000 |      |       |       |       |       |       |        |        |
| 180.000 |      |       |       |       |       |       |        |        |

ALPHA ( 1 ) = -4.039 BETA ( 3 ) = 4.249 MACH = 1.3946 Q = 599.93 P = 440.65 RN/L = 2.9118

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230 | .0460 | .0700 | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|-------|--------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     | .000  | 1.4627 | .6577 | .2057 | .0692 | .0235  |        | -.0620 | -.0434 | -.0077 | -.0147 | -.0342 | -.0671 | -.0634 |        |
| 20.000  |       |        |       | .2145 | .0765 | -.0020 | -.0430 | -.0528 | -.0391 | -.0809 | -.0767 | -.0749 | -.0519 | -.0758 | -.0405 |
| 40.000  |       |        |       | .3205 | .0836 | .0311  | -.0534 | -.0408 | -.0001 | -.0767 | -.0749 | -.0519 | -.0758 | -.0405 |        |
| 55.000  |       |        |       | .4135 | .1588 | .1032  | -.0103 | .0380  | .0001  | -.0767 | -.0749 | -.0519 | -.0758 | -.0405 |        |
| 70.000  |       |        |       | .4753 | .2098 | .1358  | .0557  | .0923  | .0151  | -.2805 | -.2257 | -.1401 | -.0136 |        |        |
| 90.000  |       | .6498  |       | .5350 | .2805 | .1346  | .0715  | .1187  | -.1114 | -.3042 | -.3009 | -.1550 | -.0174 |        |        |
| 120.000 |       |        |       | .6227 | .4364 | .2671  | .2819  | .3435  | -.0602 | -.2541 | -.4544 | -.2388 | -.0805 |        |        |

**DATE 10 FEB 76**

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

**681 30V.:**

AMES 11-073(OA14B) -140A/B/C/R ORB FUSELAGE

(31883)

$$\text{ALPHA} (1) = -4.039 \quad \text{BETA} (3) = 4.249$$

SECTION 11 ORBITER FUSELAGE

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |        |        |        |        |        |        |        |        |       |
| 140.000 |        |       |       |       |       |       |        |        |        |        |        |        |        |        |       |
| 150.000 |        |       | .6850 | .5728 | .4146 | .4567 |        | .6460  |        | -.2017 |        |        |        |        |       |
| 151.000 |        |       |       |       |       |       |        |        | .5440  | -.2141 | -.3040 | -.1775 | -.1735 | -.1238 |       |
| 162.000 |        |       |       |       |       |       |        |        | .6615  |        |        |        |        |        |       |
| 165.000 |        |       |       |       |       |       |        |        |        | -.1675 | -.3137 | -.1328 | -.1406 | -.1122 |       |
| 169.000 |        |       |       |       |       |       |        | .9847  |        |        |        |        |        |        |       |
| 174.000 |        |       |       |       |       |       | 1.0382 |        |        |        |        |        |        |        |       |
| 180.000 | 1.4627 | .9958 | .7342 | .6116 | .4863 | .5497 |        | 1.0118 |        | -.2636 | -.2866 | -.1520 | -.1253 | -.1026 |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |

SECTION : ORBITER FUSELAGE

[illegible]

DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB813)

ALPHA ( 2 ) = -.033 BETA ( 1 ) = -3.905

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1860  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 180.000 | 1.4800 | .8977  | .6065  | .5033  | .3518  | .3718  |        | .9530  |        | -.2972 | -.3365 | -.1962 | -.1680 | -.0926 |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 00.000  | -.0017 | .0097  | .0087  | -.0368 | -.1012 | -.1511 | -.2194 |        | -.2042 | -.2049 |        |        |        |        |       |
| 40.000  | -.0074 | -.0109 | -.0430 | -.1183 | -.0860 | -.2431 |        |        | -.2360 | -.2037 |        |        |        |        |       |
| 70.000  | .0170  | -.0672 | -.1263 | .0435  | .0843  | -.0179 | -.0048 |        |        |        |        |        |        |        |       |
| 90.000  | .0405  | -.0185 | -.0851 | .1238  | .0238  | -.0228 | -.0785 |        |        |        |        |        |        |        |       |
| 105.000 |        | .0185  | .1822  | .0541  | -.0892 | -.1249 |        |        |        |        |        |        |        |        |       |
| 110.000 |        |        |        |        |        |        |        | -.2252 |        |        |        |        |        |        |       |
| 120.000 | -.0211 | -.0160 | .2657  | .2237  | .0286  | -.1144 | -.1365 | -.1840 |        |        |        |        |        |        |       |
| 135.000 |        |        | .3334  | .3290  | .0355  | -.0267 | -.0203 |        |        |        |        |        |        |        |       |
| 150.000 | -.0273 | .0040  | .3180  | .3272  | .0505  | .1178  | .0451  |        |        |        |        |        |        |        |       |
| 165.000 | -.0287 | .3170  |        |        | .4019  | .2254  | -.2486 |        |        |        |        |        |        |        |       |
| 180.000 | -.0283 | .0126  | .3099  | .3353  |        |        |        |        |        |        |        |        |        |        |       |

ALPHA ( 2 ) = -.028 BETA ( 2 ) = .144 MACH = 1.3950 O = 589.93 P = 440.41 RV/L = 2.9115

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |       |        |        |        |        |        |        |        |        |        |        |        |        |
| 20.000  | 1.4851 | .7985 | .3309 | .1663  | .0970  |        |        | -.0058 | -.0116 | .0053  | .0283  | .0107  | -.0230 | -.0258 |        |
| 40.000  |        |       | .3515 | .1767  | .0828  | .0192  |        | -.0061 | -.0209 | -.0276 | -.0211 | -.0349 | -.0054 | -.0403 | -.0222 |
| 55.000  |        |       | .4717 | .2083  | .1392  | .0368  |        | -.0004 | -.0972 | .0972  |        |        |        |        |        |
| 70.000  |        |       | .5938 | .2939  | .2237  | .0956  |        | .0966  | .1208  | -.2136 | -.1361 | -.1062 | -.0451 |        |        |
| 90.000  | .7709  |       | .5924 | .3266  | .2436  | .1394  |        | .1611  | .0535  | -.2132 | -.2172 | -.1470 | -.0415 |        |        |
| 120.000 |        |       | .6263 | .3724  | .2383  | .1599  |        | .2238  | .0645  | -.1977 | -.3556 | -.1689 | -.0624 |        |        |
| 140.000 |        |       | .6559 | .4670  | .3079  | .2931  |        | .4717  | -.0307 | -.1941 | -.3534 | -.2459 | -.1558 | -.0700 |        |
| 150.000 |        |       | .6428 | .5249  | .3373  | .3570  |        | .8864  | .6361  |        |        |        |        |        |        |
| 162.000 |        |       |       |        |        |        |        |        | .7149  |        |        |        |        |        |        |
| 165.000 |        |       |       |        |        |        |        | .9962  | -.2017 | -.3226 | -.2082 | -.1655 | -.0721 |        |        |
| 174.000 |        |       |       |        |        |        |        | .9829  | -.3467 | -.3521 | -.1670 | -.1822 | -.0726 |        |        |
| 180.000 | 1.4851 | .8837 | .6167 | .5097  | .3705  | .3807  | 1.0288 |        |        |        |        |        |        |        |        |
| X/LB    | .6520  | .7290 | .7790 | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |        |
| PHI     |        |       |       |        |        |        |        |        |        |        |        |        |        |        |        |
| 00.000  | -.0068 | .0204 | .0083 | -.0294 | -.0985 | -.1454 | -.2162 |        | -.1985 | -.2113 |        |        |        |        |        |
| 40.000  | .0043  |       | .0033 | -.0289 | -.1052 | -.0315 | -.2098 |        | -.2256 | -.2096 |        |        |        |        |        |

DATE 10 FEB 76 TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB13)

|  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |  |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--|
| ALPHA ( 2 ) = -.028 BETA ( 2 ) = .144                |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |  |
| SECTION ( 1 ) ORBITER FUSELAGE                       |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |  |
| DEPENDENT VARIABLE CP                                |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |  |
| X/LB   | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |  |
| PHI  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |  |
| 70.000   | -.0040 | -.0968 | -.1263 | .0706  | .0212  | -.0525 | -.0555 |        |        |        |        |        |        |        |       |  |
| 90.000   | .0268  | -.0418 | .0171  | .0972  | -.0231 | -.0594 | -.1000 |        |        |        |        |        |        |        |       |  |
| 105.000  |        |        | .1594  | .1249  | -.1241 | -.1199 | -.1436 |        |        |        |        |        |        |        |       |  |
| 110.000  |        |        |        |        |        |        |        | -.2459 |        |        |        |        |        |        |       |  |
| 120.000  |        |        |        |        |        |        |        | -.2262 |        |        |        |        |        |        |       |  |
| 135.000  | .0122  | .0055  | .2650  | .1988  | .0041  | -.1507 | -.2207 |        |        |        |        |        |        |        |       |  |
| 150.000  |        |        | .2844  | .3351  | .0778  | -.0356 | -.0773 |        |        |        |        |        |        |        |       |  |
| 150.000  | -.0038 | .0223  | .2905  | .3526  | .1138  | .0475  | -.0288 |        |        |        |        |        |        |        |       |  |
| 165.000  | -.0104 |        | .3049  | .3357  | .1276  | -.2912 |        |        |        |        |        |        |        |        |       |  |
| 180.000  | -.0154 | .0147  | .3168  | .4490  |        |        |        |        |        |        |        |        |        |        |       |  |
| ALPHA ( 2 ) = -.033 BETA ( 3 ) = .4229 MACH = 1.3750 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |  |
| SECTION ( 1 ) ORBITER FUSELAGE                       |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |  |
| DEPENDENT VARIABLE CP                                |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |  |
| X/LB   | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4870  | .5740 |  |
| PHI  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |  |
| 20.000   | 1.4699 | .7857  | .3243  | .1508  | .0985  | .0226  |        | -.0186 | -.0170 | -.0003 | .0238  | .0024  | -.0287 | -.0338 |       |  |
| 40.000   |        |        | .3224  | .1523  | .0702  | .0194  |        | -.0191 | -.0258 | -.0022 | -.0235 | -.0076 | -.0491 | -.0302 |       |  |
| 55.000   |        |        | .3971  | .1658  | .1025  | .0414  |        | .0504  | .0602  | -.2547 | -.1692 | -.1522 | -.0495 |        |       |  |
| 70.000   |        |        | .4545  | .2098  | .1530  | .0862  |        | .1029  | .0743  | -.2706 | -.2731 | -.1709 | -.0532 |        |       |  |
| 90.000   |        |        | .4853  | .2264  | .1556  | .0757  |        | .1502  | -.0308 | -.2682 | .4542  | -.1884 | -.0671 |        |       |  |
| 120.000  |        | .6197  | .5201  | .2738  | .1478  | .2138  |        | .3627  | -.0347 | -.1934 | -.2427 | -.2010 | -.0856 |        |       |  |
| 140.000  |        |        | .5682  | .3688  | .2255  |        |        |        | -.2461 | -.3548 |        |        |        |        |       |  |
| 150.000  |        |        | .5878  | .4857  | .3084  | .3027  |        | .8193  | .5320  |        |        |        |        |        |       |  |
| 151.000  |        |        |        |        |        |        |        |        | .6344  |        |        |        |        |        |       |  |
| 162.000  |        |        |        |        |        |        |        |        |        | -.2141 | -.3634 | -.1870 | -.1847 | -.0957 |       |  |
| 165.000  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |  |
| 169.000  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |  |
| 174.000  | 1.4699 | .8622  | .6145  | .5174  | .3743  | .3670  |        | .9711  |        | -.3178 | -.3392 | -.2091 | -.1702 | -.1004 |       |  |
| 180.000  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |  |
| X/LB   | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.030  | 1.0460 |        |        |        |        |       |  |
| PHI  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |  |
| 40.000   | -.0201 | .0173  | .0071  | -.0345 | -.0987 | -.1471 | -.2156 |        |        |        |        |        |        |        |       |  |
| 70.000   | .0175  | .0206  | .0206  | -.0199 | -.1031 | -.1014 | -.2003 |        |        |        |        |        |        |        |       |  |
| 90.000   | -.0299 | -.1199 | -.0948 | .0871  | -.0013 | -.0882 | -.1055 |        |        |        |        |        |        |        |       |  |
| 105.000  | .0218  | -.0619 | .0356  | .0903  | -.0612 | -.1004 | -.1367 |        |        |        |        |        |        |        |       |  |
| 110.000  |        |        | .1699  | .1285  | -.1593 | -.1656 | -.1803 |        |        |        |        |        |        |        |       |  |
| 120.000  |        |        |        |        |        |        |        | -.2740 |        |        |        |        |        |        |       |  |
| 135.000  |        |        |        |        |        |        |        | -.2840 |        |        |        |        |        |        |       |  |
| 150.000  | .0148  | .0076  | .2244  | .0530  | -.0751 | -.2199 | -.3199 |        |        |        |        |        |        |        |       |  |
| 150.000  |        |        | .2847  | .2921  | -.0015 | -.1015 | -.1450 |        |        |        |        |        |        |        |       |  |
| 150.000  | -.0097 | .0237  | .3022  | .2887  | .0811  | -.0323 | -.1109 |        |        |        |        |        |        |        |       |  |
|  |        |        |        |        |        |        |        | -.2021 | -.2094 |        |        |        |        |        |       |  |
|  |        |        |        |        |        |        |        | -.2108 | -.2063 |        |        |        |        |        |       |  |

AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

(XE0013)

ALPHA ( 2 ) = -.033      BETA ( 3 ) = 4.229

## SECTION ( ! ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

|      |       |       |       |       |       |       |       |       |        |        |
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| X/LB | .6520 | .7290 | .7790 | .8210 | .8790 | .9210 | .9500 | .9990 | 1.0180 | 1.0460 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|

III

|         |        |       |       |       |        |
|---------|--------|-------|-------|-------|--------|
| 165.000 | -.0179 | .3033 | .2485 | .0585 | -.3221 |
|---------|--------|-------|-------|-------|--------|

|         |        |       |       |       |
|---------|--------|-------|-------|-------|
| 180.000 | -.0309 | .0181 | .3102 | .3367 |
|---------|--------|-------|-------|-------|

ALPHA ( 3 ) = 3.651    BETA ( 1 ) = -3.904    MACH = 1.394    Q = 600.12    P = 441.12    RN/L = 2.9157

## SECTION ( ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| $x/LB$ | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.000  | 0.0000 | 0.0080 | 0.0230 | 0.0460 | 0.0700 | 0.1120 | 0.1580 | 0.1660 | 0.1770 | 0.2040 | 0.2510 | 0.3010 | 0.3780 | 0.4970 | 0.5740 |

### III

[illegible]

|        |       |
|--------|-------|
| 20.000 | .4795 |
| 1.000  | .4795 |

9129' 000' 54

|       |        |
|-------|--------|
|       | 70.000 |
|       | 55.000 |
| 1499. | 69.000 |
| 1488. | 68.000 |

|        |       |       |
|--------|-------|-------|
| 20.000 | .8720 | .6982 |
| 20.000 | .8720 | .6982 |

|          |       |
|----------|-------|
| 120.0110 | .6593 |
|----------|-------|

|         |         |
|---------|---------|
| 140.000 | 150.000 |
|---------|---------|

.5658

0000.291  
0000.151

165.000

159.000

|         |        |      |       |
|---------|--------|------|-------|
| 174.000 | 1.4590 | 7677 | 1.010 |
| 190.000 |        |      |       |

|         |        |       |       |
|---------|--------|-------|-------|
| 180.000 | 1.4589 | .7633 | .4819 |
|---------|--------|-------|-------|

|     |       |       |       |
|-----|-------|-------|-------|
| 87/ | .6520 | .7290 | .7790 |
|-----|-------|-------|-------|

143

|      |       |       |       |       |        |        |        |
|------|-------|-------|-------|-------|--------|--------|--------|
| .000 | .0347 | .0453 | .0621 | .0256 | -.0336 | -.0851 | -.1613 |
|------|-------|-------|-------|-------|--------|--------|--------|

|        |       |       |
|--------|-------|-------|
| 40.000 | .0550 | .0580 |
| 000.04 | .0513 | .0500 |

97.07

|        |        |        |        |       |        |        |        |
|--------|--------|--------|--------|-------|--------|--------|--------|
| 30.000 | -.0174 | -.0918 | -.1698 | .0516 | -.0620 | -.0940 | -.1377 |
| 05.000 |        |        | -.1019 | .1125 | -.1020 | -.2006 | -.1739 |

110.000

|      |      |        |        |      |
|------|------|--------|--------|------|
| 1986 | 4201 | - 0964 | - 1024 | 9861 |
|------|------|--------|--------|------|

|         |        |        |
|---------|--------|--------|
| 135.000 | - 0500 | - 0000 |
| 50.000  | - 0500 | - 0000 |
| 2269    |        |        |

|        |         |         |       |
|--------|---------|---------|-------|
| 50.000 | - .0300 | - .0041 | .2274 |
| 65.030 | - .0419 |         | .2351 |

|        |        |       |       |
|--------|--------|-------|-------|
| 80.000 | -.0348 | .0478 | .2268 |
| 80.000 | -.0348 | .0478 | .2268 |

100

DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB813)

ALPHA ( 3 ) = 3.949 BETA ( 2 ) = .141 MACH = 1.3941 Q = 600.12 P = 441.12 RN/L = 2.9157

## SECTION ( 1 ) ORBITER FUSELAGE

| X/LB    | 0.000  | 0.080 | 0.230 | 0.460 | 0.700 | 1.120 | 1.580 | 1.650 | 1.770 | 2.040 | 2.510 | 3.010 | 3.780 | 4.970 | 5.740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     | 1.4714 | .9230 | .4422 | .2664 | .1839 | .0899 | .0495 | .0460 | .0237 | .0339 | .0258 | .0534 | .0548 | .0236 | .0231 |
| 20.000  |        |       | .4591 | .2710 | .1893 | .0899 | .0460 | .0760 | .0154 | .0694 | .0694 | .0399 | .0480 | .0103 | .0165 |
| 40.000  |        |       | .5512 | .3046 | .2217 | .1098 | .1187 | .1147 | .1147 | .1549 | .1780 | .1035 | .0993 | .1099 |       |
| 55.000  |        |       | .5869 | .3394 | .2700 | .1374 | .1272 | .1473 | .1121 | .1678 | .1878 | .1700 | .1461 | .0918 |       |
| 70.000  |        |       | .5912 | .3380 | .2551 | .1478 | .2023 | .2023 | .0825 | .1923 | .1923 | .3651 | .1992 | .1046 |       |
| 90.000  | .7330  |       | .5974 | .3559 | .2404 | .1478 | .4759 | .0015 | .0015 | .3971 | .3971 | .2915 | .1738 | .0695 |       |
| 120.000 |        |       | .5829 | .4054 | .2636 | .2460 | .8400 | .6188 | .6188 |       |       |       |       |       |       |
| 140.000 |        |       | .5343 | .4319 | .2490 | .2672 |       | .8884 |       |       |       |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

## SECTION ( 1 ) ORBITER FUSELAGE

| X/LB    | 1.4714 | .7410  | .4941  | .4151  | .2705  | .2802  | .9422  | .9363  | .9990  | 1.0180 | 1.0460 |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|--|--|--|
| PHI     | .0300  | .0588  | .0687  | .0368  | -.0305 | -.0793 | -.1581 | -.1486 | -.1493 | -.1633 | -.1680 |  |  |  |  |
| 40.000  | .0586  |        | .0739  | .0402  | -.0239 | -.0447 | -.1444 |        |        |        |        |  |  |  |  |
| 70.000  | -.0641 | -.1813 | -.1992 | -.0357 | -.0528 | -.1108 | -.1086 |        |        |        |        |  |  |  |  |
| 90.000  | -.0185 | -.1220 | -.1191 | .0330  | -.1252 | -.1576 | -.1576 |        |        |        |        |  |  |  |  |
| 105.000 |        |        | .0835  | .0604  | -.1799 | -.2350 | -.1944 |        |        |        |        |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        |        |        |        |        |  |  |  |  |
| 120.000 | -.0264 | -.0461 | .1898  | .1325  | -.0365 | -.1827 | -.2507 | -.2822 | -.2803 |        |        |  |  |  |  |
| 135.000 |        |        | .1980  | .2420  | .0340  | .0833  | -.1240 |        |        |        |        |  |  |  |  |
| 150.000 | -.0182 | .0019  | .2069  | .3242  | .0832  | -.0016 | -.0780 |        |        |        |        |  |  |  |  |
| 165.000 | -.0220 |        | .2131  |        | .2707  | .0749  | -.2724 |        |        |        |        |  |  |  |  |
| 180.000 | -.0257 | .0034  | .2192  | .4301  |        |        |        |        |        |        |        |  |  |  |  |

ALPHA ( 3 ) = 3.862 BETA ( 3 ) = .4218 MACH = 1.3941 Q = 600.12 P = 441.12 RN/L = 2.9157

## SECTION ( 1 ) ORBITER FUSELAGE

| X/LB    | 0.000  | 0.080 | 0.230 | 0.460 | 0.700 | 1.120 | 1.580 | 1.650 | 1.770 | 2.040 | 2.510 | 3.010 | 3.780 | 4.970 | 5.740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     | 1.4586 | .9120 | .4348 | .2563 | .1863 | .0777 | .0420 | .0420 | .0269 | .0214 | .0401 | .0539 | .0539 | .0200 | .0137 |
| 20.000  |        |       | .4217 | .2427 | .1495 | .0777 | .0309 | .0309 | .0147 | .0626 | .0238 | .0387 | .0387 | .0125 | .0007 |
| 40.000  |        |       | .4668 | .2522 | .1727 | .0766 | .0612 | .0612 | .0001 | .0657 | .0657 | .0391 | .0391 | .0125 | .0007 |
| 55.000  |        |       | .4839 | .2493 | .1901 | .0713 | .0657 | .0657 | .0314 | .0314 | .0314 | .0314 | .0314 | .0125 | .0007 |
| 70.000  |        |       | .4861 | .2377 | .1723 | .0730 | .0657 | .0657 | .0314 | .0314 | .0314 | .0314 | .0314 | .0125 | .0007 |
| 90.000  | .5819  |       | .5008 | .2607 | .1602 | .0697 | .1487 | .1487 | .0037 | .0037 | .0037 | .0037 | .0037 | .0125 | .0007 |
| 120.000 |        |       | .5085 | .3377 | .1998 | .1732 | .3740 | .3740 |       |       |       |       |       |       |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE6813)

ALPHA ( 3 ) = 3.862 BETA ( 3 ) = 4.219

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 163.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| X/LB    | 1.4586 | .7265 | .4958 | .4304 | .2749 | .2681 | .8980 |       |       |       |       |       |       |       |       |
| PHI     |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000  |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 105.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 110.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 135.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

| X/LB    | .6520 | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| PHI     |       |       |       |       |       |       |       |       |        |        |
| 40.000  |       |       |       |       |       |       |       |       |        |        |
| 70.000  |       |       |       |       |       |       |       |       |        |        |
| 90.000  |       |       |       |       |       |       |       |       |        |        |
| 105.000 |       |       |       |       |       |       |       |       |        |        |
| 110.000 |       |       |       |       |       |       |       |       |        |        |
| 120.000 |       |       |       |       |       |       |       |       |        |        |
| 135.000 |       |       |       |       |       |       |       |       |        |        |
| 150.000 |       |       |       |       |       |       |       |       |        |        |
| 165.000 |       |       |       |       |       |       |       |       |        |        |
| 180.000 |       |       |       |       |       |       |       |       |        |        |

ALPHA ( 4 ) = 7.881 BETA ( 1 ) = -3.904 MACH = 1.3932 Q = 600.00 P = 441.59 RN/L = 2.9150

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 20.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 55.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 155.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

DATE 10 FEB 76 TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB13)

ALPHA ( 4 ) = 7.981 BETA ( 1 ) = -3.924  
 SECTION ( 1 ) ORBITER FUSELAGE  
 X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740  
 PHI 180.000 1.4386 .6242 .3841 .3187 .1852 .1868 .8684 -.3833 -.4168 -.2731 -.2172 -.0653

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9800 .9990 1.0180 1.0460  
 PHI .0976 .1130 .1284 .0947 .0366 -.0161 -.0991 -.0962 -.1097  
 .13 .1459 .1459 .1091 .0145 .0152 -.0872 -.1064 -.1232  
 40.000 -.1336 -.2427 .2454 -.1347 -.1339 -.0874  
 70.000 -.0877 -.1944 .2381 -.0353 -.1321 .1943 .2135  
 90.000 .1124 .1124 .0235 -.1563 -.2635 -.2782  
 105.000 .0731 .0626 -.0509 -.1984 -.2436  
 120.000 .0614 .1175 -.0498 -.1370 -.1252  
 135.000 -.0886 -.0257 .0629 .1115 .0309 -.0036 -.0943  
 150.000 -.0614 .0732 .2356 .1299 -.2792  
 165.000 .1261 .3623  
 180.000 -.0512 -.0250 .128 MACH = 1.3932 Q = 600.00 P = 441.59 RN/L = 2.9150

ALPHA ( 4 ) = 7.933 BETA ( 2 ) = .128  
 SECTION ( 1 ) ORBITER FUSELAGE  
 X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740  
 PHI .0000 1.4411 1.0400 .5942 .3775 .2760 .1129 .1129 .0931 .0735 .0727 .1024 .0787 .0758  
 20.000 .5658 .3743 .2539 .1642 .1089 .1089 .0785 .0785 .0983 .1020 .0948 .0621 .0755  
 40.000 .6238 .3958 .2949 .1759 .1391 .1391 .0611 .0611 .0771 .0771 .0941 .0941 .0941  
 55.000 .6114 .3771 .2742 .1543 .1242 .1242 .1470 .1470 .1496 .0849 .0849 .0941 .1555  
 70.000 .5797 .3392 .2539 .1545 .1219 .1219 .1493 .1493 .1663 .1261 .1261 .1413 .1686  
 90.000 .5616 .3305 .2338 .1332 .1328 .1328 .1005 .1005 .1861 .3587 .3587 .3314 .1737  
 120.000 .5058 .3245 .2137 .1843 .4523 .4523 .0111 .0111 .4367 .3428 .3428 .1868 .0750  
 140.000 .4270 .3345 .1810 .1942 .7919 .7919 .6022 .6022 .2839 .3997 .3997 .2022 .0540  
 150.000 .3751 .3243 .1867 .1947 .8413 .8413 .8787 .8787 .4171 .4334 .4334 .2525 .0481  
 165.000 .7290 .8210 .8790 .9210 .9600 .9600 .9990 1.0180 1.0460  
 180.000 .1110 .0428 -.0111 -.0919  
 PHI .0914 .1183 .1420 .1110 .0428 -.0111 -.0919  
 40.000 .1155 .1547 .1194 .0358 .0096 -.0863

DATE 10 FEB 76 TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (XE8813)

ALPHA ( 4 ) = 7.933 BETA ( 2 ) = .128

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP  
 X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI  
 70.000 -.1374 -.2507 -.2705 -.1019 -.1517 -.1629 -.1505  
 90.000 -.0800 -.1851 -.2278 -.0200 -.1942 -.2142 -.2068  
 105.000 -.0348 -.0491 -.2288 -.3015 -.2831  
 110.000  
 120.000 -.0709 -.0878 .0902 .0406 -.0670 -.2137 -.2793  
 135.000 .0928 .1371 -.0249 -.1306 -.1755  
 150.000 -.0403 -.0448 .0827 .3533 .0320 -.0613 -.1215  
 165.000 -.0346 .0692 .2304 .0082 -.2875  
 180.000 -.0315 -.0203 .0907 .4703

ALPHA ( 4 ) = 7.934 BETA ( 3 ) = 4.214 MACH = 1.3932 Q = 600.00 P = 441.59 RN/L = 2.9150

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI  
 .000 1.4322 1.0290 .5467 .3754 .2756 .1398 .1113  
 20.000 .5286 .3491 .2318 .1398 .0907 .0840 .0754 .0710 .1051 .0783 .0735  
 40.000 .5322 .3372 .2410 .1293 .1000 .0664 .0664 .0681 .0854 .0382 .0545  
 55.000 .5008 .2830 .2090 .0747 .0572 .0211 .0211 .0211 .0211 .0211 .0211  
 70.000 .4769 .2460 .1701 .0829 .0645 .1002 .1339 .1460 .1460 .1351  
 90.000 .4712 .2408 .1543 .0647 .0907 .0799 .1773 .1880 .1533  
 120.000 .4417 .2683 .1626 .1368 .3801 .0249 .2541 .4009 .2233 .1028  
 140.000 .3945 .3213 .1427 .1569 .7416 .0909 .4412 .3307 .1823 .0589  
 150.000 .5097 .5853  
 162.000 .8508 .4321 .2639 .2119 .0596  
 169.000 .8054 .8953 .4021 .4135 .2719 .2119 .0740  
 174.000  
 180.000 .9990 1.0180 1.0460

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI  
 .000 .0841 .1255 .1345 .1067 .3423 .0089 .0947  
 40.000 .1028 .1636 .1257 .0387 .0387 .0009 .0900  
 70.000 .1237 .2376 .2617 .0967 .1426 .1730 .1933  
 90.000 .0636 .1705 .1460 .0322 .2174 .2055 .1996  
 105.000 .0228 .0021 .2783 .3326 .2735  
 110.000  
 120.000 .0305 .0623 .0724 .0618 .1289 .2746 .3634  
 135.000 .1418 .2273 .0782 .1739 .2129  
 150.000 .0296 .0201 .1586 .2945 .0464 .1277 .1861

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TABULATED PRESSURE DATA - CA148 ( AMES 11-073-. )  
AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB13)

ALPHA ( 4 ) = 7.934 BETA ( 3 ) = 4.214

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI .165.000 -.0357 .1077 .3470 .1792 -.0632 -.3151

180.000 -.0491 -.0113 .1058 .3470

ALPHA ( 5 ) = 11.884 BETA ( 1 ) = -3.887 MACH = 1.3946 O = 599.92 P = 440.63 RN/L = 2.9165

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI .000 1.3877 1.1513 .6755 .4867 .3648 .2539 .1874 .1678 .1430 .1272 .1409 .1459 .1486

20.000 .7191 .5109 .5109 .5109 .5109 .5109 .5109 .5109 .5109 .5109 .5109 .5109 .5109

40.000 .7896 .7896 .7896 .7896 .7896 .7896 .7896 .7896 .7896 .7896 .7896 .7896 .7896

55.000 .7458 .7458 .7458 .7458 .7458 .7458 .7458 .7458 .7458 .7458 .7458 .7458 .7458

70.000 .6757 .6757 .6757 .6757 .6757 .6757 .6757 .6757 .6757 .6757 .6757 .6757 .6757

90.000 .6181 .6181 .6181 .6181 .6181 .6181 .6181 .6181 .6181 .6181 .6181 .6181 .6181

120.000 .4905 .4905 .4905 .4905 .4905 .4905 .4905 .4905 .4905 .4905 .4905 .4905 .4905

140.000 .3467 .3467 .3467 .3467 .3467 .3467 .3467 .3467 .3467 .3467 .3467 .3467 .3467

150.000 .151.000 .151.000 .151.000 .151.000 .151.000 .151.000 .151.000 .151.000 .151.000 .151.000 .151.000 .151.000 .151.000

162.000 .165.000 .165.000 .165.000 .165.000 .165.000 .165.000 .165.000 .165.000 .165.000 .165.000 .165.000 .165.000 .165.000

169.000 .174.000 .174.000 .174.000 .174.000 .174.000 .174.000 .174.000 .174.000 .174.000 .174.000 .174.000 .174.000 .174.000

180.000 1.3877 .4819 .2543 .2291 .1147 .1191 .6776 .6512 .6842 .3328 .4371 .3634 .2191 .1074

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI .1762 .1970 .2209 .1846 .1291 .0837 -.0186 -.0484 -.0719

40.000 .2519 .2519 .2519 .2519 .2519 .2519 .2519 .2519 .2519 .2519 .2519 .2519 .2519

70.000 .3381 .3381 .3381 .3381 .3381 .3381 .3381 .3381 .3381 .3381 .3381 .3381 .3381

90.000 .2650 .2650 .2650 .2650 .2650 .2650 .2650 .2650 .2650 .2650 .2650 .2650 .2650

105.000 .2656 .2656 .2656 .2656 .2656 .2656 .2656 .2656 .2656 .2656 .2656 .2656 .2656

110.000 .1920 .1920 .1920 .1920 .1920 .1920 .1920 .1920 .1920 .1920 .1920 .1920 .1920

120.000 .0361 .0361 .0361 .0361 .0361 .0361 .0361 .0361 .0361 .0361 .0361 .0361 .0361

135.000 .0459 .0459 .0459 .0459 .0459 .0459 .0459 .0459 .0459 .0459 .0459 .0459 .0459

150.000 .1027 .1027 .1027 .1027 .1027 .1027 .1027 .1027 .1027 .1027 .1027 .1027 .1027

165.000 .0875 .0875 .0875 .0875 .0875 .0875 .0875 .0875 .0875 .0875 .0875 .0875 .0875

180.000 .0621 .0621 .0621 .0621 .0621 .0621 .0621 .0621 .0621 .0621 .0621 .0621 .0621

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## TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

(XEBB13)

AMES 11-073(0A148) -140A'B/C/R ORB FUSELAGE

ALPHA ( 5 ) = 11.891 BETA ( 2 ) = .152 MACH = 1.3548 Q = 598.92 P = 440.65 RN/L = 2.9185

## SECTION ( 1 ) ORBITTER FUSELAGE

## DEPENDENT VARIABLE C'

| X/LB    | 0.000  | 0.080  | .230  | .0460 | .3700 | .1120 | .1590 | .1660 | .1770  | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|
| PHI     | 1.3944 | 1.1530 | .6769 | .4929 | .3768 |       |       | .1908 | .1633  | .1385 | .1305 | .1305 | .1548 | .1600 | .1489 |
| 20.000  |        |        | .6877 | .4865 | .3445 | .2405 |       | .1790 | .1516  | .1139 | .1273 | .1363 | .1600 | .1325 | .1508 |
| 40.000  |        |        | .6989 | .4843 | .3594 | .2450 |       | .1967 | .1176  | .0611 |       |       |       |       |       |
| 55.000  |        |        | .6296 | .4053 | .3105 | .1451 |       | .1171 | .0693  |       |       |       |       |       |       |
| 70.000  |        |        | .5623 | .3402 | .2476 | .1522 |       | .1162 | .1672  |       |       |       |       |       |       |
| 90.000  |        | .6304  | .5232 | .3060 | .2136 | .1190 |       | .4019 | .1175  |       |       |       |       |       |       |
| 120.000 |        |        | .4317 | .2504 | .1540 | .1166 |       |       | .0217  |       |       |       |       |       |       |
| 140.000 |        |        | .3250 | .2395 | .1206 | .1275 |       | .7369 | -.2047 |       |       |       |       |       |       |
| 150.000 |        |        |       |       |       |       |       | .5867 |        |       |       |       |       |       |       |
| 162.000 |        |        |       |       |       |       |       | .6305 |        |       |       |       |       |       |       |
| 169.000 |        |        |       |       |       |       |       |       |        |       |       |       |       |       |       |
| 174.000 |        |        |       |       |       |       |       | .8030 |        |       |       |       |       |       |       |
| 180.000 |        |        |       |       |       |       |       | .8182 |        |       |       |       |       |       |       |

|      |        |       |       |       |       |       |       |       |       |        |        |        |        |        |
|------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| X/LB | 1.3944 | .4644 | .2655 | .2374 | .1168 | .1266 | .7374 | .8030 | .8182 | -.4370 | -.4578 | -.2732 | -.2001 | -.0472 |
|------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|

PHI

|         |        |        |        |        |        |        |        |  |  |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--|--|--|--|--|--|--|
| 0.000   | .1702  | .2013  | .2511  | .1958  | .1397  | .0807  | -.0217 |  |  |  |  |  |  |  |
| 40.000  | .2043  | .2359  | .2155  | .2155  | .1216  | .0922  | -.0219 |  |  |  |  |  |  |  |
| 70.000  | -.2289 | -.3569 | -.3950 | -.2093 | -.2553 | -.2453 | -.1393 |  |  |  |  |  |  |  |
| 90.000  | -.1413 | -.2386 | -.2985 | -.1125 | -.2584 | -.2707 | -.2267 |  |  |  |  |  |  |  |
| 105.000 |        |        | -.1981 | .0018  | -.3062 | -.3559 | -.3397 |  |  |  |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        |  |  |  |  |  |  |  |
| 120.000 | -.0982 | -.1204 | .0230  | -.0460 | -.1344 | -.2439 | -.3114 |  |  |  |  |  |  |  |
| 135.000 |        |        | .0068  | .0635  | -.0878 | -.1597 | -.2111 |  |  |  |  |  |  |  |
| 150.000 | -.0695 | -.0885 | .1065  | .3196  | -.0212 | -.1144 | -.1610 |  |  |  |  |  |  |  |
| 165.000 | -.0453 |        | -.0604 |        | .2240  | -.0349 | -.3114 |  |  |  |  |  |  |  |
| 180.000 | -.0383 | -.0314 | -.0408 | .4728  |        |        |        |  |  |  |  |  |  |  |

ALPHA ( 5 ) = 11.887 BETA ( 3 ) = 4.229 MACH = 1.3946 Q = 598.92 P = 440.65 RN/L = 2.9185

## SECTION ( 1 ) ORBITTER FUSELAGE

## DEPENDENT VARIABLE C'

| X/LB    | 0.000  | 0.080  | .0230 | .0460 | .0700 | .1120 | .1590 | .1660 | .1770  | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|
| PHI     | 1.3814 | 1.1360 | .6655 | .4826 | .3672 |       |       | .1843 | .1534  | .1317 | .1190 | .1190 | .1497 | .1452 | .1440 |
| 20.000  |        |        | .6366 | .4468 | .3131 | .2101 |       | .1559 | .1265  |       |       |       |       |       |       |
| 40.000  |        |        | .5939 | .4103 | .2988 | .1838 |       | .1370 | .0525  | .0614 | .0761 | .1262 | .1003 | .1187 |       |
| 55.000  |        |        | .5047 | .2967 | .2082 | .0521 |       | .0400 | -.0054 |       |       |       |       |       |       |
| 70.000  |        |        | .4475 | .2355 | .1594 | .0774 |       | .0554 | .0196  |       |       |       |       |       |       |
| 90.000  |        | .4876  | .4287 | .2135 | .1357 | .0497 |       | .0630 | .0993  |       |       |       |       |       |       |
| 120.000 |        |        | .3674 | .1992 | .1086 | .0902 |       | .3520 | .0397  |       |       |       |       |       |       |



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XE8813)

AMES 11-07310A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 6 ) = 15.868 BETA ( 1 ) = -3.863

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1860  | .1770  | .2040  | .2510  | .3010  | .3780 | .4870 | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |       |       |       |
| 180.000 | 1.3152 | .3125  | .1494  | .1403  | .0483  | .0598  | .7233  | -.4438 | -.4628 | -.3088 | -.1971 | -.0758 |       |       |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |       |       |       |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |       |       |       |
| 00.000  | .2731  | .2970  | .3250  | .3018  | .2371  | .1537  | .0226  | -.0039 | -.0279 |        |        |        |       |       |       |
| 40.000  | .3127  | .3659  | .3121  | .2152  | .1570  | .0229  |        | -.0661 | -.1129 |        |        |        |       |       |       |
| 70.000  | -.2582 | -.4455 | -.5261 | -.4658 | -.3869 | -.1680 |        |        |        |        |        |        |       |       |       |
| 90.000  | -.1475 | -.3138 | -.3769 | -.1986 | -.2710 | -.2407 |        |        |        |        |        |        |       |       |       |
| 105.000 |        |        | -.2978 | -.0411 | -.2845 | -.3653 |        |        |        |        |        |        |       |       |       |
| 110.000 |        |        |        |        |        |        | -.3091 |        |        |        |        |        |       |       |       |
| 120.000 | -.2287 | -.1984 | -.1133 | .0846  | -.1962 | -.2796 | -.2811 |        |        |        |        |        |       |       |       |
| 135.000 |        |        | -.0434 | .0312  | -.2052 | -.1845 | -.2178 |        |        |        |        |        |       |       |       |
| 150.000 | -.2859 | -.3221 | -.1993 | .1570  | -.3775 | -.2768 | -.3064 |        |        |        |        |        |       |       |       |
| 165.000 | -.1253 | -.2106 |        | .1594  | -.0599 | -.3334 |        |        |        |        |        |        |       |       |       |
| 180.000 | -.0825 | -.1038 | -.1058 | .3907  |        |        |        |        |        |        |        |        |       |       |       |

ALPHA ( 6 ) = 15.865 BETA ( 2 ) = .152 MACH = 1.3935 Q = 600.21 P = 441.59 RN/L = 2.8216

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1860 | .1770  | .2040  | .2510  | .3010  | .3780  | .4870  | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 20.000  | 1.3240 | 1.2486 | .8011 | .6025 | .4771 |       |       | .2712 | .2398  | .2124  | .1907  | .2171  | .2296  | .2328  |       |
| 40.000  |        |        | .8021 | .5925 | .4410 | .3226 |       | .2589 | .2202  | .1534  | .1585  | .1708  | .2052  | .2017  | .2257 |
| 55.000  |        |        | .7685 | .5640 | .4399 | .3169 |       | .2404 | .0437  |        |        |        |        |        |       |
| 70.000  |        |        | .6303 | .4100 | .3048 | .1216 |       | .0859 | .0469  | -.1157 | -.0800 | -.0850 | -.1978 |        |       |
| 90.000  |        | .5645  | .5304 | .3271 | .2297 | .1413 |       | .1006 | .1451  | -.1424 | -.0833 | -.1188 | -.1983 |        |       |
| 120.000 |        |        | .4686 | .2716 | .1865 | .0914 |       | .0914 | .1098  | -.1798 | -.3363 | -.5260 | -.3194 |        |       |
| 140.000 |        |        | .3510 | .1700 | .0681 | .0547 |       | .3182 | .0289  |        |        |        |        |        |       |
| 160.000 |        |        | .2255 | .1486 | .0539 | .0642 |       | .6435 | -.1884 | -.4865 | -.4461 | -.2405 | -.1057 |        |       |
| 180.000 |        |        |       |       |       |       |       |       | .5470  |        |        |        |        |        |       |
| PHI     |        |        |       |       |       |       |       |       | .5981  |        |        |        |        |        |       |
| 20.000  |        |        |       |       |       |       |       |       |        | -.3495 | -.4526 | -.3339 | -.1872 | -.0671 |       |
| 40.000  |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 55.000  |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 70.000  |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 90.000  |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 120.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 140.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 160.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 20.000  | .2843  | .2891  | .3537 | .3126 | .2458 | .1590 | .0205 |       |        |        |        |        |        |        |       |
| 40.000  | .2881  |        | .3710 | .3258 | .2232 | .1588 | .0234 |       |        |        |        |        |        |        |       |

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TABULATED PRESSURE DATA - OA148 ( AMES 11-073-1 )

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(XE8813)

AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 6 ) = 15.865 BETA ( 2 ) = .152

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| 70.000  | -.3487 | -.4866 | -.5476 | -.4620 | -.4988 | -.4339 | -.2204 |        |        |        |
| 90.000  | -.2103 | -.3314 | -.4022 | -.2573 | -.3714 | -.3618 | -.2995 |        |        |        |
| 105.000 |        |        | -.2861 | -.0816 | -.4052 | -.4427 | -.4096 |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.3948 |        |        |
| 120.000 | -.1207 | -.1616 | -.0820 | -.0200 | -.1904 | -.2537 | -.3297 | -.3786 |        |        |
| 135.000 |        |        | .0062  | -.0062 | -.1115 | -.1804 | -.2351 |        |        |        |
| 150.000 | -.1533 | -.1736 | -.1870 | .2381  | -.2736 | -.2307 | -.2670 |        |        |        |
| 165.000 | -.0802 |        | -.1070 |        | .2343  | -.0793 | -.3438 |        |        |        |
| 180.000 | -.0744 | -.0564 | -.0752 | .4577  |        |        |        |        |        |        |

ALPHA ( 6 ) = 15.903 BETA ( 3 ) = 4.263 MACH = 1.3935 Q = 600.21 P = 441.59 RN/L = 2.9216

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .166L  | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|--------|-------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |       |       |       |       |       |        |       |        |        |        |        |        |       |
| 20.000  | 1.3144 | 1.2379 | .7894 | .5939 | .4676 |       |       | .2696  |       | .2325  | .2073  | .1931  | .2164  | .2240  | .2296 |
| 40.000  |        |        | .7513 | .5510 | .4065 |       |       | .2313  |       | .1977  |        |        |        |        |       |
| 55.000  |        |        | .6529 | .4830 | .3631 |       |       | .1606  |       | .0839  | .0650  | .1181  | .1757  | .1721  | .2003 |
| 70.000  |        |        | .4942 | .2869 | .1970 |       |       | -.0139 |       | -.0429 |        |        |        |        |       |
| 90.000  |        | .4315  | .4074 | .2243 | .1404 |       |       | .0232  |       | -.0110 | -.1437 | -.1295 | -.1530 | -.2911 |       |
| 120.000 |        |        | .3941 | .1852 | .1101 | .0280 |       | .0346  |       | .1017  | -.1756 | -.1340 | -.1741 | -.2493 |       |
| 140.000 |        |        | .3033 | .1267 | .0454 | .0301 |       | .2906  |       | .0539  | -.2283 | -.3674 | -.4866 | -.2036 |       |
| 150.000 |        |        | .2042 | .1435 | .0407 |       |       | .5932  |       | -.2742 | -.4896 | -.3840 | -.1845 | -.0769 |       |
| 162.000 |        |        |       |       |       |       |       |        | .4565 |        |        |        |        |        |       |
| 165.000 |        |        |       |       |       |       |       |        | .5270 |        |        |        |        |        |       |
| 174.000 |        |        |       |       |       |       |       |        |       |        |        |        |        |        |       |
| 180.000 | 1.3144 | .2556  | .1558 | .1672 | .0691 | .0523 | .5733 | .6861  |       | -.3521 | -.4572 | -.2918 | -.1767 | -.0523 |       |

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

| X/LB    | .2625  | .3083  | .3393  | .2929  | .2264  | .1504  | .0169  |
|---------|--------|--------|--------|--------|--------|--------|--------|
| 40.000  | .2561  | .3632  | .3056  | .3056  | .2086  | .1464  | .0183  |
| 70.000  | -.4070 | -.4546 | -.5032 | -.4320 | -.4742 | -.3722 | -.2347 |
| 90.000  | -.2226 | -.3536 | -.4039 | -.2718 | -.4027 | -.3773 | -.3398 |
| 105.000 |        | -.2465 | -.1713 | -.1713 | -.5067 | -.5263 | -.4813 |
| 110.000 |        |        |        |        |        |        |        |
| 120.000 | -.1003 | -.1366 | -.0410 | -.1952 | -.1803 | -.2858 | -.3944 |
| 145.000 |        |        | -.1781 | .0506  | -.1763 | -.2575 | -.2879 |
| 150.000 | -.0797 | -.0897 | -.1139 | .2326  | -.0268 | -.1343 | -.2157 |

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(XEBB13)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 6 ) = 15.903 BETA ( 3 ) = 4.263

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790 | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|-------|--------|--------|-------|--------|--------|
| PHI     |        |        |        |       |       |        |        |       |        |        |
| 165.000 | -.0594 |        | -.0888 |       | .2790 | -.0783 | -.3495 |       |        |        |
| 180.000 | -.0797 | -.1065 | -.1064 | .3986 |       |        |        |       |        |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

(XE8814) : ( 05 AUG 75 )

## REFERENCE DATA

|   |       |   |           |        |   |      |   |           |        |
|---|-------|---|-----------|--------|---|------|---|-----------|--------|
| = | SREF  | = | 2690.0000 | SO.FT. | = | XMRP | = | 1076.6873 | IN. X0 |
| = | LREF  | = | 474.8000  | IN.    | = | YMRP | = | .0000     | IN. Y0 |
| = | BREF  | = | 536.0580  | IN.    | = | ZMRP | = | 375.0000  | IN. Z0 |
| = | SCALE | = | .0300     |        |   |      |   |           |        |

## PARAMETRIC DATA

|          |      |          |        |
|----------|------|----------|--------|
| RUDDER = | .000 | SPDBRX = | 35.000 |
| BOFLAP = | .000 | L-ELVN = | .000   |
| R-ELVN = | .000 | MACH =   | 1.250  |

|             |        |            |        |      |          |   |          |   |          |      |          |
|-------------|--------|------------|--------|------|----------|---|----------|---|----------|------|----------|
| ALPHA ( ) = | -4.010 | BETA ( ) = | -3.884 | MACH | = 1.2452 | Q | = 599.70 | P | = 552.51 | RN/L | = 3.0159 |
|-------------|--------|------------|--------|------|----------|---|----------|---|----------|------|----------|

## DEPENDENT VARIABLE CP

## SECTION ( ) ORBITER FUSELAGE

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700  | .1120  | .1580  | .1660  | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|--------|-------|-------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |       |       |        |        |        |        |       |        |        |        |        |        |        |
| 20.000  | 1.4024 | .6288  | .1882 | .0649 | .0092  |        |        | -.0130 |       | -.0105 | -.0210 | -.0538 | -.0711 | -.1012 | -.0648 |
| 40.000  |        |        | .2249 | .0691 | -.0171 | -.0615 |        | -.0431 |       | -.0725 |        |        |        |        |        |
| 55.000  |        |        | .1091 | .1096 | .0363  | -.0564 |        | -.1072 |       | -.2028 | -.2016 | -.1558 | -.0963 | -.1264 | -.0793 |
| 70.000  |        |        | .5632 | .2943 | .2190  | .1207  |        | .0852  |       | .0198  |        |        |        |        |        |
| 70.000  |        |        | .6748 | .4058 | .3197  | .2668  |        | .1804  |       | .0132  | -.2775 | -.1321 | -.0792 | .0202  |        |
| 90.000  | .9172  |        | .7359 | .4838 | .3631  | .3224  |        | .2348  |       | .0132  | -.2455 | -.2410 | -.0960 | .0145  |        |
| 120.000 |        |        | .6042 | .4612 | .4543  | .5236  |        | .4949  |       | .0728  | -.1794 | -.4204 | -.1368 | -.0262 |        |
| 140.000 |        |        |       |       |        |        |        | .9236  |       | .0427  |        |        |        |        |        |
| 150.000 |        |        | .7946 | .6471 | .5368  | .6074  |        |        | .6521 | -.2016 | -.3948 | -.2334 | -.1300 | -.0743 |        |
| 151.000 |        |        |       |       |        |        |        |        | .7087 |        |        |        |        |        |        |
| 162.000 |        |        |       |       |        |        |        |        |       | -.2691 | -.2937 | -.2301 | -.1451 | -.0871 |        |
| 165.000 |        |        |       |       |        |        |        | .9790  |       |        |        |        |        |        |        |
| 169.000 |        |        |       |       |        |        |        |        |       |        |        |        |        |        |        |
| 174.000 |        |        |       |       |        |        |        |        |       |        |        |        |        |        |        |
| 180.000 | 1.4024 | 1.0070 | .7340 | .6116 | .5278  | .6045  | 1.0502 | .9089  |       | -.3767 | -.3725 | -.1777 | -.1675 | -.0958 |        |

|       |       |       |       |       |       |       |       |       |        |        |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| Y/1 B | .6520 | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|

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|         |       |        |        |        |        |        |        |
|---------|-------|--------|--------|--------|--------|--------|--------|
| PHI     | .0000 | -.0281 | -.0591 | -.1195 | -.1966 | -.2509 | -.3168 |
|         | .0000 | -.0712 | -.0887 | -.1224 | -.2060 | -.1913 | -.3721 |
| 40.000  | .0803 | .0012  | .0134  | .3105  | .1460  | .0545  | .0265  |
| 70.000  | .0965 | .0422  | .1654  | .2767  | .1242  | .0190  | .0076  |
| 90.000  |       |        | .3029  | .2689  | .0457  | -.0412 | -.0709 |
| 105.000 |       |        |        |        |        |        | -.2181 |
| 110.000 |       |        |        | .3036  | .0128  | -.0338 | -.0527 |
| 120.000 | .0687 | .0702  | .4250  | .4857  | .0619  | .0633  | .0301  |
| 135.000 |       |        | .4748  | .4857  | .1547  | .1455  | .0545  |
| 150.000 | .0313 | .0988  | .4671  | .4748  | .4308  | .2336  | -.3037 |
| 165.000 | .0214 |        | .4580  |        |        |        |        |
| 180.000 | .0082 | .1212  | .4557  | .5339  |        |        |        |
|         |       |        |        |        |        |        | -.2096 |

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TABULATED PRESSURE DATA - 0A148 (AVES 11-073-1)

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(XE8814)

AVES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA (1) = -3.944 BETA (2) = .148 MACH = 1.2452 Q = 599.70 P = 552.51 RV/L = 3.0159

## SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120  | .1580 | .1660  | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|-------|-------|-------|-------|-------|--------|-------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     | .000  | .6308 | .1984 | .0578 | .0358 |        |       | -.0119 |       | -.0021 | -.0088 | -.0552 | -.0771 | -.0944 | -.0565 |
| 20.000  |       |       | .2168 | .0655 | .0030 | -.0307 |       | -.0271 |       | -.0360 |        |        |        |        |        |
| 40.000  |       |       | .3563 | .0935 | .0282 | -.0679 |       | -.0605 |       | -.1489 | -.1344 | -.1229 | -.0863 | -.0948 | -.0560 |
| 55.000  |       |       | .4762 | .2222 | .1581 | .0679  |       | .0582  |       | -.0240 |        |        |        |        |        |
| 70.000  |       |       | .5572 | .2986 | .1805 | .1805  |       | .1293  |       | .0082  | -.3411 | -.2057 | -.1191 | -.0023 |        |
| 90.000  |       | .7793 | .6224 | .3709 | .2704 | .2265  |       | .1615  |       | -.0864 | -.3242 | -.3174 | -.1210 | -.0088 |        |
| 120.000 |       |       | .7051 | .5143 | .3935 | .4421  |       | .3914  |       | -.0441 | -.2750 | -.4966 | -.1903 | -.0400 |        |
| 140.000 |       |       |       |       |       |        |       |        |       | -.1613 |        |        |        |        |        |
| 150.000 |       |       | .7402 | .6120 | .4961 | .5670  |       | .8506  |       | -.2833 | -.3669 | -.2506 | -.1642 | -.0624 |        |
| 162.000 |       |       |       |       |       |        |       | .5810  |       |        |        |        |        |        |        |
| 165.000 |       |       |       |       |       |        |       | .6392  |       |        |        |        |        |        |        |
| 174.000 |       |       |       |       |       |        |       | .9475  |       | -.2747 | -.3480 | -.1744 | -.1711 | -.0638 |        |
| 180.000 |       |       |       |       |       |        |       | .9376  |       | -.3449 | -.4094 | -.1514 | -.1659 | -.0679 |        |

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

| PHI     | .0013 | -.0226 | -.0484 | -.1188 | -.1975 | -.2521 | -.3171 |
|---------|-------|--------|--------|--------|--------|--------|--------|
| 40.000  |       |        | -.0657 | -.1149 | -.2004 | -.2040 | -.3519 |
| 70.000  |       | -.0095 | .1174  | .2925  | .1021  | .0050  | -.0263 |
| 90.000  |       | .0392  | .2225  | .2615  | .0470  | -.0348 | -.0416 |
| 105.000 |       |        | .3245  | .2372  | -.0217 | -.0833 | -.1112 |
| 110.000 |       |        |        |        |        |        |        |
| 120.000 |       | .1036  | .3649  | .1351  | -.0557 | -.1267 | -.1608 |
| 135.000 |       |        | .4502  | .4503  | .0107  | -.0250 | -.0565 |
| 150.000 |       | .1273  | .4752  | .4719  | .1147  | .0378  | -.0343 |
| 165.000 |       | .0326  | .4719  | .3465  | .1137  | -.3344 |        |
| 180.000 |       | .0239  | .4780  | .5985  |        |        |        |

ALPHA (1) = -4.009 BETA (3) = .4237 MACH = 1.2452 Q = 599.70 P = 552.51 RV/L = 3.0159

## SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|-------|--------|-------|-------|--------|--------|-------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |       |        |       |       |        |        |       |        |       |        |        |        |        |        |        |
| 20.000  |       |        | .1960 | .0479 | .0323  |        |       | -.0349 |       | -.0108 | -.0151 | -.0542 | -.0698 | -.1029 | -.0707 |
| 40.000  |       | .13947 | .1977 | .0465 | -.0068 | -.0436 |       | -.0159 |       | -.0246 |        |        |        |        |        |
| 55.000  |       |        | .2980 | .0574 | .0129  | -.0326 |       | -.0313 |       | -.0892 | -.0990 | -.1077 | -.0776 | -.0892 | -.0390 |
| 70.000  |       |        | .3886 | .1355 | .0816  | .0155  |       | .0207  |       | -.0508 |        |        |        |        |        |
| 90.000  |       |        | .4534 | .1888 | .1257  | .0866  |       | .0694  |       | -.0487 | -.3870 | -.2484 | -.1363 | -.0205 |        |
| 120.000 |       | .6351  | .5178 | .2557 | .1808  | .1249  |       | .0810  |       | -.1843 | -.3936 | -.3701 | -.1257 | -.0175 |        |
|         |       |        | .6105 | .4181 | .2699  | .3391  |       | .2778  |       | -.1572 | -.3450 | -.5546 | -.2628 | -.0545 |        |

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 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE6814)

ALPHA ( 1 ) = -4.009 BETA ( 3 ) = 4.237

## SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 140.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 151.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 169.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 180.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| X/LP    | 1.3947 | .9771 | .7395 | .6166 | .5217 | .6005 | .9876 | .9257 |        |        |       |       |       |       |       |
|         | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |

PHI

|         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| 40.000  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 70.000  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 90.000  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 105.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 110.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 120.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 135.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 150.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 165.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 180.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

-.3221  
 -.3314  
 -.3967  
 -.1972  
 -.2252  
 -.0908  
 -.2809  
 -.4170  
 -.1664  
 -.1901  
 -.0986  
 -.3865  
 -.3516  
 -.1776  
 -.1664  
 -.1003

-.3267  
 -.3206  
 -.3144  
 -.2745

-.3063  
 -.2987

ALPHA ( 2 ) = .205 BETA ( 1 ) = -3.866 MACH = 1.2472 Q = 601.31 P = 552.29 RN/L = 3.0212

## SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 20.000  |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000  |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 55.000  |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| X/LP    | 1.4125 | .7657 | .3050 | .1637 | .0968 | .0070 |       |       |       |       |       |       |       |       |       |
|         | .6751  | .5257 | .3973 | .5131 |       |       |       |       |       |       |       |       |       |       |       |

PHI

|         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| 20.000  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40.000  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 55.000  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 70.000  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 90.000  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 120.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 140.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 151.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 169.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 174.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 180.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

.0155  
 .0124  
 .0197  
 .0948  
 .1699  
 .2250  
 .2755  
 .5039  
 .8970  
 .6293  
 .6748  
 -.3220  
 -.4028  
 -.3039  
 -.1871  
 -.0867

.0160  
 .0202  
 .0687  
 .0948  
 .1267  
 .0715  
 .0839  
 .0200  
 -.2296  
 -.3103  
 -.1725  
 -.0936

.0268  
 -.0739  
 -.0689  
 -.0221  
 -.0784  
 -.0395  
 -.2512  
 -.2327  
 -.1954  
 -.1280  
 -.0381  
 -.1823  
 -.4113  
 -.1642  
 -.0896

-.0240  
 -.0221  
 -.0784  
 -.0814  
 -.1280  
 -.0381  
 -.1642  
 -.0896  
 -.1725  
 -.0936

-.0630  
 -.0784  
 -.0395  
 -.0814  
 -.1280  
 -.0381  
 -.1642  
 -.0896  
 -.1725  
 -.0936

1.0010

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEBB14)

ALPHA ( 2 ) = .205 BETA ( 1 ) = -3.866

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1860  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 180.000 | 1.4125 | .8748  | .6031  | .4926  | .3874  | .5088  |        | .8643  |        | -.4245 | -.4316 | -.2479 | -.2084 | -.0787 |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0450 |        |        |        |        |       |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| .000    | .0208  | .0173  | .0131  | -.0472 | -.1166 | -.1768 | -.2534 |        | -.2533 | -.2552 |        |        |        |        |       |
| 40.000  | -.0138 |        | -.0060 | -.0424 | -.1331 | -.0983 | -.2888 |        | -.2602 | -.2201 |        |        |        |        |       |
| 70.000  | .0072  | -.1151 | -.1789 | .1599  | .0687  | -.0327 | -.0201 |        |        |        |        |        |        |        |       |
| 90.000  | .0279  | -.0445 | -.0647 | .1411  | .0449  | -.0559 | -.0822 |        |        |        |        |        |        |        |       |
| 105.000 |        |        | .1544  | .1852  | -.0251 | -.1244 | -.1652 |        |        |        |        |        |        |        |       |
| 110.000 |        |        |        |        |        |        |        | -.2394 |        |        |        |        |        |        |       |
| 120.000 | -.0043 | -.0225 | .3206  | .2092  | -.0513 | -.1293 | -.1331 | -.2416 |        |        |        |        |        |        |       |
| 135.000 |        |        | .3775  | .3704  | -.0251 | -.0304 | -.0489 |        |        |        |        |        |        |        |       |
| 150.000 | .0039  | .0430  | .3721  | .3580  | .0439  | .0607  | -.0159 |        |        |        |        |        |        |        |       |
| 165.000 | -.0013 |        | .3620  |        | .3626  | .1608  | -.3071 |        |        |        |        |        |        |        |       |
| 180.000 | -.0009 | .1008  | .3500  | .3711  |        |        |        |        |        |        |        |        |        |        |       |

ALPHA ( 2 ) = .220 BETA ( 2 ) = .185 MACH = 1.2472 Q = 601.31 P = 552.29 RV/L = 3.0212

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460  | .0700  | .1120  | .1580  | .1860 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |       |        |        |        |        |       |        |        |        |        |        |        |        |
| 20.000  | 1.4150 | .7645 | .3066 | .1580  | .1107  |        |        | .0214 |        | .0373  | .0364  | -.0012 | -.0289 | -.0561 | -.0510 |
| 40.000  |        |       | .3266 | .1611  | .0783  | .0137  |        | .0285 |        | .0114  |        |        |        |        |        |
| 55.000  |        |       | .4456 | .1990  | .1174  | .0496  |        | .0493 |        | -.0252 | -.0383 | -.0485 | -.0258 | -.0686 | -.0324 |
| 70.000  |        |       | .5291 | .2854  | .2075  | .1229  |        | .1309 |        | .0557  |        |        |        |        |        |
| 90.000  |        | .7523 | .5698 | .3185  | .2262  | .1762  |        | .1670 |        | .0671  | -.3048 | -.1756 | -.1382 | -.0452 |        |
| 120.000 |        |       | .6081 | .3611  | .2291  | .2263  |        | .2067 |        | -.0172 | -.2987 | -.2725 | -.1644 | -.0511 |        |
| 140.000 |        |       | .6412 | .4496  | .3078  | .3980  |        | .4143 |        | -.0214 | -.2720 | -.4769 | -.1611 | -.0649 |        |
| 150.000 |        |       | .6331 | .5031  | .3658  | .4849  |        | .8181 |        | -.3189 | -.4640 | -.3184 | -.1841 | -.0574 |        |
| 162.000 |        |       |       |        |        |        |        |       | .5467  |        |        |        |        |        |        |
| 165.000 |        |       |       |        |        |        |        |       | .6168  |        |        |        |        |        |        |
| 169.000 |        |       |       |        |        |        |        |       |        | -.3272 | -.3965 | -.2468 | -.2013 | -.0539 |        |
| 174.000 |        |       |       |        |        |        |        |       |        |        |        |        |        |        |        |
| 180.000 | 1.4150 | .8592 | .6131 | .4988  | .3975  | .5158  | .9884  | .9143 |        | -.4621 | -.4708 | -.2186 | -.2073 | -.0543 |        |
| X/LB    | .6520  | .7290 | .7790 | .8210  | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |        |        |        |        |        |
| PHI     |        |       |       |        |        |        |        |       |        |        |        |        |        |        |        |
| .000    | .0153  | .0254 | .0176 | .0438  | -.1195 | -.1747 | -.2548 |       | -.2543 | -.2652 |        |        |        |        |        |
| 40.000  | .0072  |       | .0108 | -.0352 | -.1327 | -.1202 | -.2657 |       | -.2692 | -.2294 |        |        |        |        |        |

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TABULATED PRESSURE DATA - OA148 ( AMES 11-073-1 )

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(XEB814)

AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = .220 BETA ( 2 ) = .185

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .5520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0480 |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |       |        |        |        |        |        |        |
| 70.000  | -.0095 | -.1190 | -.1331 | .1629 | .0160  | -.0797 | -.0797 |        |        |        |
| 90.000  | .0188  | -.0498 | .0653  | .1197 | -.0254 | -.0959 | -.1275 |        |        |        |
| 105.000 |        |        | .1988  | .1175 | -.0990 | -.1662 | -.1954 |        |        |        |
| 110.000 |        |        |        |       |        |        |        | -.2997 |        |        |
| 120.000 | .0318  | .0241  | .2867  | .1663 | -.0868 | -.1891 | -.2290 | -.2859 |        |        |
| 135.000 |        |        | .3191  | .3759 | .0013  | -.0982 | -.1331 |        |        |        |
| 150.000 | .0261  | .0773  | .3328  | .3925 | .0599  | -.0189 | -.1055 |        |        |        |
| 165.000 | .0212  |        | .3514  | .2833 | .0525  | -.3120 |        |        |        |        |
| 180.000 | .0123  | .0762  | .3695  | .4790 |        |        |        |        |        |        |

ALPHA ( 2 ) = .215 BETA ( 3 ) = .4264 MACH = 1.2472 Q = 601.31 P = 552.29 RN/L = 3.0212

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |        |       |        |        |        |        |        |        |        |       |
| 20.000  | 1.4026 | .7529 | .3036 | .1604 | .1060 |        |       | -.0022 | .0214  | .0255  | .0007  | -.0256 | -.0616 | -.0648 |       |
| 40.000  |        |       | .3012 | .1441 | .0779 | -.0028 |       | .0023  | .0143  | .0143  |        |        |        |        |       |
| 55.000  |        |       | .3769 | .1961 | .1027 | .0156  |       | .0469  | -.0090 | -.0143 | -.0426 | -.0336 | -.0803 | -.0372 |       |
| 70.000  |        |       | .4327 | .1985 | .1406 | .0498  |       | .0906  | .0200  |        |        |        |        |        |       |
| 90.000  |        |       | .4662 | .2159 | .1394 | .0823  |       | .1093  | .0162  | -.3503 | -.2242 | -.1787 | -.0533 |        |       |
| 120.000 | .6020  |       | .5031 | .2530 | .1354 | .1133  |       | .1350  | -.1002 | -.3596 | -.3260 | -.1754 | -.0476 |        |       |
| 140.000 |        |       | .5524 | .3662 | .2099 | .3128  |       | .3090  | -.1273 | -.3587 | -.5326 | -.1686 | -.0537 |        |       |
| 150.000 |        |       | .5817 | .4846 | .3191 | .4266  |       | .7425  | -.3108 | -.4374 | -.2706 | -.2284 | -.0620 |        |       |
| 162.000 |        |       |       |       |       |        |       | .4438  |        |        |        |        |        |        |       |
| 165.000 |        |       |       |       |       |        |       | .5340  |        |        |        |        |        |        |       |
| 160.000 |        |       |       |       |       |        |       |        | -.3387 | -.4779 | -.2308 | -.2265 | -.0698 |        |       |
| 174.000 |        |       |       |       |       |        |       |        |        |        |        |        |        |        |       |
| 180.000 | 1.4026 | .8375 | .6127 | .4966 | .3877 | .4983  | .9365 | .8643  | -.4410 | -.4169 | -.2431 | -.2057 | -.0783 |        |       |

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

|         |        |        |        |        |        |        |        |  |  |  |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--|--|--|--|--|--|--|--|
| 40.000  | .0011  | .0266  | .0124  | -.0467 | -.1212 | -.1762 | -.2545 |  |  |  |  |  |  |  |  |
| 70.000  | .0280  |        | .0200  | -.0285 | -.1296 | -.1320 | -.2484 |  |  |  |  |  |  |  |  |
| 90.000  | -.0195 | -.1229 | -.0719 | .1593  | -.0106 | -.1195 | -.1340 |  |  |  |  |  |  |  |  |
| 105.000 | .0174  | -.0592 | .0703  | .1122  | -.0753 | -.1361 | .1685  |  |  |  |  |  |  |  |  |
| 110.000 |        |        | .1905  | .1088  | -.1522 | -.2085 | -.2357 |  |  |  |  |  |  |  |  |
| 120.000 | .0332  | .0335  | .2375  | .0155  | -.1716 | -.2910 | -.3259 |  |  |  |  |  |  |  |  |
| 135.000 |        |        | .3171  | .3245  | -.0794 | -.1734 | -.2172 |  |  |  |  |  |  |  |  |
| 150.000 | .0138  | .0937  | .3377  | .3342  | .0164  | -.1056 | -.1884 |  |  |  |  |  |  |  |  |

-.2585 -.2625  
-.2611 -.2431-.3478  
-.3381

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8814)

ALPHA ( 2 ) = .215 BETA ( 3 ) = 4.264

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 .0006 .3399 .2081 -.0164 -.3509  
180.000 -.0064 .0937 .3798

ALPHA ( 3 ) = 3.903 BETA ( 1 ) = -3.872 MACH = 1.2473 Q = 600.93 P = 551.82 RN/L = 3.0266

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.4028 .8874 .4155 .2688 .1644 .0835 .0535 .0500 .0638 .0403 .0291 -.0135 -.0199  
20.000 .4638 .2867 .1615 .0835 .0651 .0307 .0307 .0307 .0347 .0113 .0475 -.0197 -.0022  
40.000 .6075 .3446 .2252 .1325 .1097 .0347 .0347 .0347 .0347 .0113 .0475 -.0197 -.0022  
55.000 .6796 .4388 .3283 .2221 .2164 .1500 .1500 .1500 .1500 .0806 -.0765 -.1049  
70.000 .6901 .4478 .3302 .2509 .2455 .1693 .1693 .1693 .1693 .1374 -.1298 -.1003  
90.000 .6977 .4615 .3262 .2877 .2877 .2965 .2965 .2965 .2965 .1986 -.4078 -.2740 -.1692  
110.000 .6977 .4615 .3262 .2877 .2877 .2965 .2965 .2965 .2965 .1986 -.4078 -.2740 -.1692  
140.000 .6977 .4615 .3262 .2877 .2877 .2965 .2965 .2965 .2965 .1986 -.4078 -.2740 -.1692  
150.000 .6977 .4615 .3262 .2877 .2877 .2965 .2965 .2965 .2965 .1986 -.4078 -.2740 -.1692  
151.000 .6977 .4615 .3262 .2877 .2877 .2965 .2965 .2965 .2965 .1986 -.4078 -.2740 -.1692  
162.000 .6977 .4615 .3262 .2877 .2877 .2965 .2965 .2965 .2965 .1986 -.4078 -.2740 -.1692  
165.000 .6977 .4615 .3262 .2877 .2877 .2965 .2965 .2965 .2965 .1986 -.4078 -.2740 -.1692  
169.000 .6977 .4615 .3262 .2877 .2877 .2965 .2965 .2965 .2965 .1986 -.4078 -.2740 -.1692  
174.000 .6977 .4615 .3262 .2877 .2877 .2965 .2965 .2965 .2965 .1986 -.4078 -.2740 -.1692  
180.000 .6977 .4615 .3262 .2877 .2877 .2965 .2965 .2965 .2965 .1986 -.4078 -.2740 -.1692

.6150

.6509

.3710 -.4618 -.3599 -.2091 -.0806

.9112

.8283

.9990

1.0180

1.0460

-2014

-2111

-1909

-1743

-2657

-2769

-1834

-1322

-0410

.0017

.1169

-.2964

.3166

X/LB

PHI

CGO

40.000

70.000

90.000

105.000

110.000

120.000

135.000

150.000

165.000

180.000

DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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ALPHA ( 3 ) = 3.903 BETA ( 2 ) = .184 MACH = 1.2473 Q = 600.93 P = 551.82 RN/L = 3.0266  
 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (XE8814)

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 20.000  | 1.4040 | .8843 | .4165 | .2704 | .1779 |       |       | .0521 | .0693  | .0704  | .0458  | .0225  | -.0093 | -.0138 |       |
| 40.000  |        |       | .4322 | .2723 | .1559 | .0800 |       | .0585 | .0524  | .0419  | .0109  | .0251  | -.0270 | -.0098 |       |
| 55.000  |        |       | .5295 | .3021 | .1983 | .1081 |       | .1057 | .1023  |        |        |        |        |        |       |
| 70.000  |        |       | .5695 | .3402 | .2453 | .1437 |       | .1725 | .1109  | -.2688 | -.1557 | -.1370 | -.1.46 |        |       |
| 90.000  |        | .7178 | .5752 | .3402 | .2347 | .1624 |       | .1897 | .0393  | -.2778 | -.2128 | -.1910 | -.1017 |        |       |
| 120.000 |        |       | .5838 | .3577 | .2245 | .1798 |       | .2311 | -.0007 | -.2731 | -.4664 | -.2188 | -.1080 |        |       |
| 140.000 |        |       | .5766 | .4001 | .2385 | .3163 |       | .4319 | -.0898 | -.5130 | -.3704 | -.1898 | -.0610 |        |       |
| 150.000 |        |       | .5383 | .4206 | .2515 | .4005 |       | .7879 | -.3323 |        |        |        |        |        |       |
| 151.200 |        |       |       |       |       |       |       | .5332 |        |        |        |        |        |        |       |
| 162.000 |        |       |       |       |       |       |       | .5920 |        |        |        |        |        |        |       |
| 165.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 169.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 174.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 180.000 | 1.4040 | .7325 | .5086 | .4062 | .2867 | .4239 | .9321 | .8627 | -.5147 | -.5159 | -.2667 | -.2272 | -.0468 |        |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 20.000  | 1.3918 | .8747 | .4125 | .2789 | .1815 |       |       | .382  | .0473  | .0606  | .0498  | .0253  | -.0119 | -.0251 |       |
| 40.000  |        |       | .4028 | .2534 | .1458 | .0502 |       | .4290 | .0404  | .0456  | .0089  | .0087  | -.0434 | -.0303 |       |
| 55.000  |        |       | .4501 | .2539 | .1704 | .0664 |       | .0729 | .0406  |        |        |        |        |        |       |
| 70.000  |        |       | .4644 | .2482 | .1789 | .0597 |       | .1241 | .0668  |        |        |        |        |        |       |
| 90.000  |        | .5713 | .4687 | .2362 | .1559 | .0724 |       | .0621 | .0621  | -.3069 | -.2059 | -.1853 | -.1073 |        |       |
| 120.000 |        |       | .4839 | .2530 | .1441 | .0793 |       | .1596 | -.0353 | -.3293 | -.2651 | -.2208 | -.0937 |        |       |
| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 20.000  | 1.3918 | .8747 | .4125 | .2789 | .1815 |       |       | .382  | .0473  | .0606  | .0498  | .0253  | -.0119 | -.0251 |       |
| 40.000  |        |       | .4028 | .2534 | .1458 | .0502 |       | .4290 | .0404  | .0456  | .0089  | .0087  | -.0434 | -.0303 |       |
| 55.000  |        |       | .4501 | .2539 | .1704 | .0664 |       | .0729 | .0406  |        |        |        |        |        |       |
| 70.000  |        |       | .4644 | .2482 | .1789 | .0597 |       | .1241 | .0668  |        |        |        |        |        |       |
| 90.000  |        | .5713 | .4687 | .2362 | .1559 | .0724 |       | .0621 | .0621  | -.3069 | -.2059 | -.1853 | -.1073 |        |       |
| 120.000 |        |       | .4839 | .2530 | .1441 | .0793 |       | .1596 | -.0353 | -.3293 | -.2651 | -.2208 | -.0937 |        |       |
| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |



## DATE 10 FEB 76 TABULATED PRESSURE DATA - 0A148 (AMES 11-073-1)

AMES 11-07310A148) -140A/B/C/R ORB FUSELAGE

(XEBB14)

ALPHA (4) = 7.853 BETA (1) = -3.870

## SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 180.000 | 1.3707 | .6080  | .3706  | .3180  | .1714  | .2318  |        | .7934  |        | -.5143 | -.5040 | -.3226 | -.2241 | -.0619 |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 180.000 | .1080  | .1355  | .1734  | .1271  | .0471  | -.0245 | -.1384 |        | -.1566 | -.1727 |        |        |        |        |       |
| 40.000  | .1351  | .1757  | .1305  | .1305  | .0258  | .0107  | -.1391 |        | -.1540 | -.1611 |        |        |        |        |       |
| 70.000  | -.1339 | -.2574 | -.3164 | -.1458 | -.0876 | -.1267 | -.0404 |        |        |        |        |        |        |        |       |
| 90.000  | -.0916 | -.1995 | -.2764 | -.0212 | -.1668 | -.1702 | -.1355 |        |        |        |        |        |        |        |       |
| 105.000 |        | -.0646 | .0426  | .0426  | -.2156 | -.2936 | -.2099 |        |        |        |        |        |        |        |       |
| 110.000 |        |        |        |        |        |        |        | -.2598 |        |        |        |        |        |        |       |
| 120.000 | -.1733 | -.1625 | .1087  | .0749  | -.1129 | -.2480 | -.2816 | -.2517 |        |        |        |        |        |        |       |
| 135.000 |        | .0945  | .0945  | .1730  | -.0862 | -.1514 | -.1765 |        |        |        |        |        |        |        |       |
| 150.000 | -.0749 | -.0258 | .0891  | .2107  | .0162  | -.0491 | -.1516 |        |        |        |        |        |        |        |       |
| 165.000 | -.0407 | .1209  | .1209  | .2498  | .0716  | -.3361 |        |        |        |        |        |        |        |        |       |
| 180.000 | -.0363 | -.0013 | .1851  | .4119  |        |        |        |        |        |        |        |        |        |        |       |

ALPHA (4) = 7.959 BETA (2) = .181 MACH = 1.2469 Q = 600.88 P = 552.06 RN/L = 3.0236

## SECTION (1) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0020  | .0230 | .0460 | .0700 | .1120  | .1580  | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|-------|-------|-------|--------|--------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |       |       |       |        |        |       |        |        |        |        |        |        |       |
| 180.000 | 1.3739 | 1.0063 | .5411 | .3822 | .2701 | .1467  |        | .1153 |        | .1040  | .1009  | .1044  | .0868  | .0518  | .0502 |
| 20.000  |        |        | .5580 | .3770 | .2406 | .1467  |        | .1156 |        | .0921  |        |        |        |        |       |
| 40.000  |        |        | .6149 | .3968 | .2768 | .1850  |        | .1467 |        | .1061  | .1099  | .0757  | .0835  | .0340  | .0473 |
| 55.000  |        |        | .5382 | .3792 | .2786 | .1573  |        | .1618 |        | .1287  |        |        |        |        |       |
| 70.000  |        |        | .5673 | .3489 | .2410 | .1547  |        | .1906 |        | .1413  | -.2198 | -.1361 | -.1292 | -.2023 |       |
| 90.000  |        | .6715  | .5490 | .3387 | .2190 | .1514  |        | .2397 |        | .0921  | -.2486 | -.1758 | -.1853 | -.1715 |       |
| 120.000 |        |        | .5009 | .3345 | .1921 | .1953  |        | .4383 |        | .0237  | -.2705 | -.4529 | -.3594 | -.1691 |       |
| 140.000 |        |        | .4314 | .3378 | .1537 | .2180  |        | .7654 |        | -.0767 | -.5554 | -.4233 | -.1955 | -.0690 |       |
| 150.000 |        |        |       |       |       |        |        |       | .5247  |        |        |        |        |        |       |
| 162.000 |        |        |       |       |       |        |        |       | .5681  |        |        |        |        |        |       |
| 169.000 |        |        |       |       |       |        | .8644  |       |        | -.4114 | -.4828 | -.3327 | -.2078 | -.0475 |       |
| 174.000 |        |        |       |       |       |        |        |       |        |        |        |        |        |        |       |
| 180.000 | 1.3739 | .5916  | .3848 | .3196 | .1812 | .2444  |        | .8288 |        | -.5499 | -.5490 | -.3005 | -.2201 | -.0444 |       |
| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790 | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |        |       |       |       |        |        |       |        |        |        |        |        |        |       |
| 180.000 | .0870  | .1450  | .1866 | .1272 | .0510 | -.0226 | -.1406 |       |        |        |        |        |        |        |       |
| 40.000  | .1167  |        | .1988 | .1427 | .0294 | .0009  | -.1375 |       |        |        |        |        |        |        |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB814)

ALPHA ( 4 ) = 7.959 BETA ( 2 ) = .181  
AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| 70.000  | -.1332 | -.2479 | -.3170 | -.0993 | -.1118 | -.1867 | -.1174 |        |        |        |
| 90.000  | -.0775 | -.1924 | -.2605 | -.0111 | -.2244 | -.2009 | -.2303 |        |        |        |
| 105.000 |        |        | -.0331 | .0595  | -.2908 | -.3119 | -.2832 |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.3893 |        |        |
| 120.000 | -.0621 | -.0842 | .1132  | .0392  | -.1592 | -.2881 | -.3600 | -.3272 |        |        |
| 135.000 |        |        | .1181  | .2374  | -.0862 | -.1947 | -.2472 |        |        |        |
| 150.000 | -.0164 | -.0310 | .1647  | .4451  | -.0245 | -.1264 | -.1942 |        |        |        |
| 165.000 | -.0119 |        | .1988  |        | .1753  | -.0598 | -.3360 |        |        |        |
| 180.000 | -.0125 | .0027  | .2321  | .4998  |        |        |        |        |        |        |

ALPHA ( 4 ) = 7.960 BETA ( 3 ) = 4.251 MACH = 1.2469 Q = 600.86 P = 552.06 RN/L = 3.0236

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| 20.000  |        |       | .5342 | .3803 | .2620 |       |       | .1032 |       | .0884  | .0858  | .0974  | .0874  | .0466  | .0387  |
| 40.000  | 1.3618 | .9955 | .5171 | .3482 | .2184 | .1194 |       | .0905 |       | .0677  | .0538  | .0829  | .0559  | .0045  | .0309  |
| 55.000  |        |       | .5223 | .3326 | .2298 | .1215 |       | .0739 |       | .0946  | .0946  |        |        |        |        |
| 70.000  |        |       | .4856 | .2755 | .1957 | .0684 |       | .1295 |       | .1015  | .0267  | .2398  | -.1895 | -.1871 | -.2068 |
| 90.000  |        | .5254 | .4594 | .2416 | .1575 | .0683 |       | .1810 |       | .0267  | -.2398 | -.2305 | -.2373 | -.1644 |        |
| 120.000 |        |       | .4532 | .2400 | .1443 | .0668 |       | .3615 |       | -.0565 | -.3367 | -.4969 | -.2295 | -.0980 |        |
| 140.000 |        |       | .4318 | .2710 | .1350 | .1287 |       |       |       | -.1840 |        |        |        |        |        |
| 150.000 |        |       | .3941 | .3141 | .1130 | .1786 |       | .6994 |       | -.4173 | -.5588 | -.3624 | -.1947 | -.0545 |        |
| 162.000 |        |       |       |       |       |       |       |       | .4359 |        |        |        |        |        |        |
| 169.000 |        |       |       |       |       |       |       |       | .4974 |        |        |        |        |        |        |
| 174.000 |        |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| 180.000 | 1.3418 | .5681 | .3872 | .3387 | .1679 | .2162 | .8365 | .8017 |       | -.4225 | -.5362 | -.3086 | -.2279 | -.0512 |        |

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

|         |        |        |        |        |        |        |        |        |  |  |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--|--|--|--|--|--|--|
| PHI     |        |        |        |        |        |        |        |        |  |  |  |  |  |  |  |
| 40.000  | .0746  | .1420  | .1779  | .1247  | .0449  | -.0338 | -.1486 |        |  |  |  |  |  |  |  |
| 70.000  | .0975  | .2060  | .2060  | .1430  | .0276  | -.0125 | -.1439 |        |  |  |  |  |  |  |  |
| 90.000  | -.1216 | -.2921 | -.3159 | -.0942 | -.1400 | -.2456 | -.1834 |        |  |  |  |  |  |  |  |
| 105.000 | -.0608 | -.1871 | -.1319 | -.0439 | -.2266 | -.1971 | -.2800 |        |  |  |  |  |  |  |  |
| 110.000 |        |        | .0285  | -.0105 | -.3552 | -.3109 | -.3233 |        |  |  |  |  |  |  |  |
| 120.000 | -.0108 | -.0688 | .0895  | -.0897 | -.2154 | -.3571 | -.4579 | -.4259 |  |  |  |  |  |  |  |
| 135.000 |        |        | .1918  | .2427  | -.1478 | -.2401 | -.2899 | -.3559 |  |  |  |  |  |  |  |
| 150.000 | -.0100 | -.0077 | .2322  | .3439  | -.0923 | -.2039 | -.2604 |        |  |  |  |  |  |  |  |

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ORIGINAL PAGE IS POOR

DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(YEBB14)

ALPHA ( 4 ) = 7.960 BETA ( 3 ) = 4.251

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 -.0233 .1794  
180.000 -.0350 .0106 .1595 .3955 .1185 -.1315 -.3852

ALPHA ( 5 ) = 11.929 BETA ( 1 ) = -3.853 MACH = 1.2466 Q = 600.83 P = 552.29 RAVL = 3.0248

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.3176 1.1115 .6627 .4801 .3544 .2341 .1917 .1637 .1406 .1349 .1625 .1215 .1356  
20.000 .7077 .5030 .3546 .2341 .1917 .1637 .1406 .1349 .1625 .1215 .1356  
40.000 .7761 .5435 .4117 .2975 .1962 .1715 .1566 .1746 .1229 .1585  
55.000 .7337 .5085 .3932 .2522 .1879 .1623 .1251 -.0555 -.0604 -.1524  
70.000 .6534 .4453 .3137 .2356 .1879 .1623 .1251 -.0555 -.0604 -.1524  
90.000 .6017 .4019 .2779 .1981 .2397 .1859 .1727 -.0782 -.1227 -.1962  
100.000 .7465 .4617 .2945 .1707 .4647 .1189 .1859 .1727 -.0782 -.1227 -.1962  
120.000 .4702 .2945 .1707 .1707 .4647 .1189 .1859 .1727 -.0782 -.1227 -.1962  
140.000 .3328 .2277 .1127 .1374 .8402 .1117 .5968 .5349 .2758 .1577  
150.000 .3328 .2277 .1127 .1374 .8402 .1117 .5968 .5349 .2758 .1577  
160.000 .3328 .2277 .1127 .1374 .8402 .1117 .5968 .5349 .2758 .1577  
170.000 .3328 .2277 .1127 .1374 .8402 .1117 .5968 .5349 .2758 .1577  
180.000 .3328 .2277 .1127 .1374 .8402 .1117 .5968 .5349 .2758 .1577.5797  
.5969

.4653

.5566

.4501

.2407

.1031

.8461

.7587

.5506

.5347

.3447

.2116

.0629

.4653

.5566

.4501

.2407

.1031

.0629

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .1868 .2676 .2877 .2115 .1204 .0299 -.0983  
40.000 .2199 .3149 .3149 .2271 .0913 .0633 -.0974  
70.000 .2576 .3878 .4140 .2088 .1202 .1255 .1032  
90.000 .1674 .2857 .3556 .0837 .2310 .1192 .1784  
105.000 .2866 .0137 .2642 .2596 .2135  
120.000 .1917 .2082 .0086 .0554 .1785 .2694 .2500  
135.000 .1069 .2123 .0003 .1799 .1423 .1817 .2075  
150.000 .0714 .0452 .0443 .3084 .0775 .1769 .2557  
165.000 .0528 .0487 .0765 .4632 .1762 .0226 .3589  
180.000 .0528 .0487 .0765 .4632 .1762 .0226 .3589

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## TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

(XEBB14)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 5 ) = 11.937 BETA ( 2 ) = .177 MACH = 1.2466 Q = 600.83 P = 552.29 RN/L = 3.0248

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230  | .0460 | .0700 | .1120 | .1580 | .1656 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     | .000  | 1.3247 | 1.1157 | .6652 | .4864 | .3643 | .2226 | .1932 | .1711 | .1373 | .1543 | .1592 | .1261 | .1337 |       |
| 20.000  |       | .6778  |        | .4802 | .3406 | .2226 | .1923 | .1518 | .1518 | .1523 | .1303 | .1445 | .1064 | .1351 |       |
| 40.000  |       | .6861  |        | .4781 | .3591 | .2377 | .2012 | .1168 | .1149 |       |       |       |       |       |       |
| 55.000  |       | .6097  |        | .3995 | .2883 | .1486 | .1137 | .1649 | .1649 | .1754 | .1245 | .1304 | .2244 |       |       |
| 70.000  |       | .5445  |        | .3416 | .2271 | .1526 | .1170 | .1361 | .1361 | .2245 | .1484 | .1825 | .2541 |       |       |
| 90.000  |       | .6086  |        | .3099 | .1963 | .1222 | .1932 | .0497 | .0497 | .2664 | .4343 | .5507 | .2247 |       |       |
| 120.000 |       | .4105  |        | .2512 | .1386 | .1314 | .4212 | .0624 | .0624 | .5912 | .4705 | .2180 | .0903 |       |       |
| 140.000 |       | .3177  |        | .2559 | .0922 | .1321 | .7435 | .5163 | .5163 |       |       |       |       |       |       |
| 150.000 |       |        |        |       |       |       |       | .5470 |       |       |       |       |       |       |       |
| 151.000 |       |        |        |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |        |        |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |        |        |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |        |        |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |        |        |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |        |        |       |       |       |       |       |       |       |       |       |       |       |       |

| X/LB    | .13247 | .4403 | .2677 | .2365 | .0989 | .1333 | .7872 | .7759 | .9990 | 1.0180 | 1.0460 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| PHI     | .000   | .1816 | .3001 | .2959 | .2180 | .1233 | .0349 | .0976 |       |        |        |
| 40.000  |        | .2038 | .3164 | .3164 | .2311 | .0970 | .0546 | .0924 |       |        |        |
| 70.000  |        | .2335 | .3805 | .4204 | .2009 | .2672 | .1071 | .1071 |       |        |        |
| 90.000  |        | .1422 | .2543 | .3434 | .1033 | .2969 | .2759 | .2759 |       |        |        |
| 105.000 |        |       | .1876 | .0018 | .0018 | .3485 | .4123 | .3021 |       |        |        |
| 110.000 |        |       |       |       |       |       |       |       |       |        |        |
| 120.000 |        |       |       |       |       |       |       |       |       |        |        |
| 135.000 |        |       |       |       |       |       |       |       |       |        |        |
| 150.000 |        |       |       |       |       |       |       |       |       |        |        |
| 165.000 |        |       |       |       |       |       |       |       |       |        |        |
| 180.000 |        |       |       |       |       |       |       |       |       |        |        |

ALPHA ( 5 ) = 11.932 BETA ( 3 ) = .4267 MACH = 1.2466 Q = 600.83 P = 552.29 RN/L = 3.0248

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230  | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     | .000  | 1.3099 | 1.1016 | .5568 | .4842 | .3488 | .1941 | .1841 | .1572 | .1373 | .1466 | .1665 | .1211 | .1330 |       |
| 20.000  |       | .6292  |        | .4432 | .3069 | .1919 | .1512 | .1512 | .1237 | .1085 | .1043 | .1152 | .0681 | .0990 |       |
| 40.000  |       | .5837  |        | .4006 | .2887 | .1672 | .1343 | .1343 | .0480 |       |       |       |       |       |       |
| 55.000  |       | .4868  |        | .2793 | .1896 | .0420 | .0368 | .0368 | .0561 |       |       |       |       |       |       |
| 70.000  |       | .4287  |        | .2253 | .1404 | .0687 | .0630 | .0630 | .1104 |       |       |       |       |       |       |
| 90.000  |       | .4053  |        | .2052 | .1231 | .0448 | .1725 | .1725 | .0721 |       |       |       |       |       |       |
| 120.000 |       | .3498  |        | .1931 | .0940 | .0819 | .3766 | .3766 | .0257 |       |       |       |       |       |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(41883X)

AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

$$\text{ALPHA} (5) = 11.932 \quad \text{BETA} (3) = 4.267$$

## SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

[illegible]

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TABULATED PRESSURE DATA - 0A148 (AMES 11-073-1)

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AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

(XE8815) ( 05 AUG 75 )

## REFERENCE DATA

|       |   |           |        |      |   |           |     |    |
|-------|---|-----------|--------|------|---|-----------|-----|----|
| SREF  | = | 2690.0000 | 50.FT. | XMRP | = | 1076.6800 | IN. | X0 |
| LREF  | = | 474.8000  | IN.    | YMRP | = | .0000     | IN. | Y0 |
| BREF  | = | 936.0580  | IN.    | ZMRP | = | 375.0000  | IN. | Z0 |
| SCALE | = | .0300     |        |      |   |           |     |    |

|          |      |          |        |
|----------|------|----------|--------|
| RUDDER = | .000 | SPOBRK = | 35.000 |
| BOFLAP = | .000 | L-ELVN = | .000   |
| R-ELVN = | .000 | MACH =   | 1.100  |

## PARAMETRIC DATA

|               |        |              |        |      |   |        |   |   |        |   |   |        |      |   |        |
|---------------|--------|--------------|--------|------|---|--------|---|---|--------|---|---|--------|------|---|--------|
| ALPHA ( 1 ) = | -4.072 | BETA ( 1 ) = | -3.851 | MACH | = | 1.0992 | Q | = | 599.97 | P | = | 709.32 | RN/L | = | 3.1890 |
|---------------|--------|--------------|--------|------|---|--------|---|---|--------|---|---|--------|------|---|--------|

## SECTION 11 ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

[illegible][illegible]

|           | 0     | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8      | 9      |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| . . . . . | .6520 | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |

[illegible]

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB15)

ALPHA ( 1 ) = -4.070 BETA ( 2 ) = .189 MACH = 1.0992 Q = 599.97 P = 709.32 RN/L = 3.1890

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000   | .5493 | .1368 | .0760 | .0170  |        |       | -.0113 | -.0496 | -.0870 | -.1423 | -.1285 | -.0958 | -.0261 |       |
| 20.000  |        |       | .1530 | .0694 | -.0147 | -.0426 |       | -.0361 | -.0860 | -.1811 | -.1901 | -.1429 | -.1124 | -.0155 |       |
| 40.000  |        |       | .2972 | .0778 | -.0095 | -.0435 |       | -.1043 | -.1811 | -.1944 |        |        |        |        |       |
| 55.000  |        |       | .4244 | .1991 | .1215  | .0527  |       | -.0207 | -.1086 |        |        |        |        |        |       |
| 70.000  |        |       | .5144 | .2819 | .2043  | .1663  |       | .0437  | -.0910 | -.4715 | -.2457 | -.1174 | -.0236 |        |       |
| 90.000  |        | .7398 | .5893 | .3543 | .2703  | .2015  |       | .0737  | -.2030 | -.4317 | -.4057 | -.1074 | -.0230 |        |       |
| 120.000 |        |       | .6843 | .5071 | .3863  | .4111  |       | .2945  | -.1582 | -.3962 | -.8212 | -.1512 | -.0325 |        |       |
| 140.000 |        |       |       |       |        |        |       |        | -.2366 | -.4200 | -.5081 | -.2829 | -.2111 | -.0200 |       |
| 150.000 |        |       | .7322 | .6115 | .5097  | .5388  |       | .7612  | .4569  |        |        |        |        |        |       |
| 151.000 |        |       |       |       |        |        |       |        | .5329  |        |        |        |        |        |       |
| 162.000 |        |       |       |       |        |        |       |        |        | -.4474 | -.4479 | -.2249 | -.2260 | -.0164 |       |
| 165.000 |        |       |       |       |        |        |       |        |        |        |        |        |        |        |       |
| 169.000 |        |       |       |       |        |        |       |        |        |        |        |        |        |        |       |
| 174.000 |        |       |       |       |        |        |       |        |        |        |        |        |        |        |       |
| 180.000 | 1.3198 | .9702 | .7362 | .6214 | .5481  | .5854  | .9690 | .6510  | -.4641 | -.5455 | -.2045 | -.2313 | -.0124 |        |       |

X/LB

PHI

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|-------|-------|-------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | .5289 | .1296 | .0786 | .0111  |        |       | -.0162 | -.0462 | -.0949 | -.1467 | -.1392 | -.1000 | -.0090 |       |
| 20.000  |       |       | .1339 | .0601 | -.0205 | -.0558 |       | -.0162 | -.0703 | -.1422 | -.1954 | -.1465 | -.0829 | .0697  |       |
| 40.000  |       |       | .2343 | .0601 | -.0020 | -.0249 |       | -.0521 | -.1443 |        |        |        |        |        |       |
| 55.000  |       |       | .3326 | .1249 | .0692  | .0236  |       | -.0408 | -.1443 |        |        |        |        |        |       |
| 70.000  |       |       | .4080 | .1787 | .1242  | .1004  |       | -.0093 | -.1541 | -.5290 | -.3083 | -.1123 | -.0097 |        |       |
| 90.000  |       | .5910 | .4753 | .2390 | .1891  | .1097  |       | -.0022 | -.3073 | -.5106 | -.4691 | -.1221 | -.0015 |        |       |
| 120.000 |       |       | .5819 | .4004 | .2778  | .3048  |       | .1780  | -.2906 | -.4913 | -.6959 | -.2178 | -.0300 |        |       |

X/LB

PHI

ALPHA ( 1 ) = -4.075 BETA ( 3 ) = 4.283 MACH = 1.0992 Q = 599.97 P = 709.32 RN/L = 3.1890

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB15)

ALPHA ( 2 ) = -.011 BETA ( 1 ) = -3.863

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

180.000 1.3278 .8564 .6070 .5135 .4439 .5013 .7744 -.6033 -.5168 -.3013 -.2549 -.0498

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .1014 .0540 .0169 -.0564 -.1299 -.2100 -.3133  
40.000 .0193 .0280 .0280 -.0478 -.1748 -.1516 -.3530  
70.000 .0355 -.1452 .0601 .2684 .0421 -.0472 -.0776  
90.000 .0698 -.0860 .1560 .2788 .0084 -.1232 -.1177  
105.000 .2710 .2770 -.0773 -.1786 -.1800  
110.000 .3860 .2845 -.1406 -.1600 -.1935  
120.000 .4463 .421 -.1012 -.0668 -.1214  
135.000 .0882 .1708 .4488 .4145 -.0093 -.0081 -.1029  
150.000 .0320 .4290 .2564 .0613 -.3405  
165.000 .0954 .2204 .4107 .4601  
180.000 .3823  
-.2675

ALPHA ( 2 ) = -.004 BETA ( 2 ) = .183 MACH = 1.0994 Q = 599.94 P = 709.08 RML = 3.1892

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.3316 .6920 .2592 .1709 .0852 .0322 .0036 -.0386 -.0696 -.0869 -.1043 -.0326

20.000

40.000

55.000

70.000

90.000

120.000

140.000

150.000

162.000

165.000

169.000

174.000

180.000

PHI

.000 .0501 .0377 -.0025 -.0736 -.1510 -.2114 -.2808

.0470 .0055 -.0439 -.1687 -.1572 -.3187

.2438 -.2954

-.2652 -.2341

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB15)

ALPHA ( 2 ) = -.004 BETA ( 2 ) = .133

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .6520 | .7290  | .7790 | .8210 | .8790  | .9210  | .9600  | .9980  | 1.0180 | 1.0460 |
|---------|-------|--------|-------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |       |        |       |       |        |        |        |        |        |        |
| 70.000  | .0183 | -.1395 | .1308 | .2425 | .0007  | -.0919 | -.1382 |        |        |        |
| 90.000  | .0498 | -.0691 | .2166 | .2267 | -.0463 | -.1476 | -.1646 |        |        |        |
| 105.000 |       |        | .2855 | .2087 | -.1275 | -.2106 | -.2415 |        |        |        |
| 110.000 |       |        |       |       |        |        |        | -.4119 |        |        |
| 120.000 | .0698 | .1232  | .3442 | .2016 | -.1764 | -.2320 | -.2770 | -.3437 |        |        |
| 135.000 |       |        | .3842 | .4218 | -.1038 | -.1475 | -.1926 |        |        |        |
| 150.000 | .0867 | .1782  | .4171 | .4628 | -.0285 | -.0979 | -.1757 |        |        |        |
| 165.000 | .0903 |        | .4173 |       | .1839  | -.0360 | -.3397 |        |        |        |
| 180.000 | .0964 | .2102  | .4235 | .5575 |        |        |        |        |        |        |

ALPHA ( 2 ) = -.007 BETA ( 3 ) = .4260 MACH = 1.0994 Q = 599.94 P = 709.08 RN/L = 3.1892

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230 | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|-------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |       |        |       |        |        |        |        |        |        |        |        |        |        |        |        |
| 20.000  |       |        | .2490 | .1719  | .0736  |        |        | .0200  |        | .0105  | -.0417 | -.0864 | -.0873 | -.1044 | -.0298 |
| 40.000  | 1.314 | .6725  | .2476 | .1486  | .0364  | .0238  |        | .0230  |        | -.0086 |        | -.0403 | -.0884 | -.0911 | .0312  |
| 55.000  |       |        | .3285 | .1545  | .0649  | .0636  |        | .0280  |        | -.0658 |        | -.0658 | -.1314 | -.0985 |        |
| 70.000  |       |        | .3918 | .1958  | .1206  | .1059  |        | .0320  |        | -.0789 |        | -.4847 | -.2838 | -.2082 | -.0485 |
| 90.000  |       | .5691  | .4295 | .2134  | .1348  | .1437  |        | .0394  |        | -.2181 |        | -.4957 | -.3755 | -.1701 | -.0384 |
| 120.000 |       |        | .4717 | .2518  | .1507  | .1589  |        | .0503  |        | -.2580 |        | -.4823 | -.6651 | -.1703 | -.0342 |
| 140.000 |       |        | .5333 | .3624  | .2499  | .3082  |        | .2166  |        | -.4618 |        | -.5915 | -.3310 | -.2575 | -.0334 |
| 150.000 |       |        | .5727 | .4706  | .3688  | .4261  |        | .6523  | .3381  |        |        |        |        |        |        |
| 162.000 |       |        |       |        |        |        |        |        | .4199  |        |        |        |        |        |        |
| 165.000 |       |        |       |        |        |        |        |        |        | -.5055 |        | -.6182 | -.2959 | -.2760 | -.0364 |
| 169.000 |       |        |       |        |        |        |        |        |        |        |        |        |        |        |        |
| 174.000 |       |        |       |        |        |        |        |        |        |        |        |        |        |        |        |
| 180.000 | 1.314 | .8222  | .6131 | .5102  | .4371  | .4987  | .8717  | .7732  |        | -.6142 |        | -.5082 | -.3002 | -.2461 | -.0416 |
| X/LB    | .6520 | .7290  | .7790 | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |        |
| PHI     |       |        |       |        |        |        |        |        |        |        |        |        |        |        |        |
| 40.000  | .1074 | .0539  | .0120 | -.0687 | -.1627 | -.2224 | -.3210 |        |        |        |        |        |        |        |        |
| 70.000  | .0960 |        | .0191 | -.0627 | -.1735 | -.1874 | -.3271 |        |        |        |        |        |        |        |        |
| 90.000  | .0428 | -.1056 | .1088 | .2027  | -.0542 | -.1662 | -.2080 |        |        |        |        |        |        |        |        |
| 105.000 | .0813 | -.0154 | .1631 | .1906  | -.1193 | -.2217 | -.2279 |        |        |        |        |        |        |        |        |
| 110.000 |       |        | .2356 | .1511  | -.2116 | -.2828 | -.3112 |        |        |        |        |        |        |        |        |
| 120.000 |       |        |       |        |        |        |        | -.4516 |        |        |        |        |        |        |        |
| 135.000 | .1047 | .1033  | .2706 | .0755  | -.2903 | -.3519 | -.3892 |        |        |        |        |        |        |        |        |
| 150.000 | .1215 | .2013  | .3678 | .3914  | -.2023 | -.2637 | -.2998 |        |        |        |        |        |        |        |        |
|         |       |        | .3882 | .4114  | -.1001 | -.2109 | -.2888 |        |        |        |        |        |        |        |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB15)

ALPHA ( 2 ) = -.007 BETA ( 3 ) = .4260

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520 | .7290 | .7790 | .8210 | .8790 | .9210  | .9500  | .9990 | 1.0180 | 1.0460 |
|---------|-------|-------|-------|-------|-------|--------|--------|-------|--------|--------|
| PHI     |       |       |       |       |       |        |        |       |        |        |
| 165.000 | .1156 | .2117 | .3942 |       | .1026 | -.1365 | -.3740 |       |        |        |
| 180.000 | .1093 | .2123 | .4762 |       |       |        |        |       |        |        |

ALPHA ( 3 ) = 3.931 BETA ( 1 ) = -3.870 MACH = 1.0960 Q = 598.54 P = 711.89 RV/L = 3.1895

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| .000    | 1.3148 | .8172 | .3779 | .2561 | .1666 | .0781 | .0865 | .0779 | .0402  | .0099  | -.0382 | -.0348 | -.0621 | -.0395 |       |
| 20.000  |        |       | .4245 | .2688 | .1436 | .0781 | .0881 | .0881 | .0209  | .0085  | -.0216 | -.0433 | -.0092 | -.0720 | .0109 |
| 40.000  |        |       | .5665 | .3279 | .2152 | .1560 | .1738 | .1738 | .0734  | .0801  | -.3323 | -.1325 | -.1449 | -.1072 |       |
| 55.000  |        |       | .6436 | .4249 | .3238 | .2517 | .1896 | .1896 | .0240  | .0240  | -.3481 | -.1878 | -.2028 | -.1072 |       |
| 70.000  |        |       | .6591 | .4394 | .3331 | .2940 | .2244 | .2244 | -.0083 | -.3171 | -.5404 | -.3105 | -.1635 |        |       |
| 90.000  |        | .8239 | .6668 | .4543 | .3414 | .3224 | .4157 | .4157 | -.0868 | -.6774 | -.4941 | -.2116 | -.0841 |        |       |
| 120.000 |        |       | .6360 | .4686 | .3644 | .4128 | .7856 | .7856 | .4982  |        |        |        |        |        |       |
| 140.000 |        |       | .5586 | .4349 | .3514 | .4315 | .5288 | .5288 |        |        |        |        |        |        |       |
| 150.000 |        |       |       |       |       |       |       |       | -.5547 | -.6058 | -.4538 | -.2232 | -.0656 |        |       |
| 162.000 |        |       |       |       |       |       |       | .8142 |        |        |        |        |        |        |       |
| 165.000 |        |       |       |       |       |       |       | .7299 |        |        |        |        |        |        |       |
| 169.000 |        |       |       |       |       |       |       |       | -.6607 | -.5872 | -.3596 | -.2448 | -.0509 |        |       |
| 174.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 180.000 | 1.3148 | .7186 | .4830 | .4059 | .3374 | .4270 | .8951 | .7299 |        |        |        |        |        |        |       |

X/LB

PHI

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9500  | .9990 | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|--------|--------|--------|-------|--------|--------|
| PHI     |        |        |        |       |        |        |        |       |        |        |
| .000    | .1611  | .1644  | .1265  | .0291 | -.0761 | -.1744 | -.2886 |       |        |        |
| 40.000  | .1031  |        | .1441  | .0397 | -.1104 | -.1044 | -.3021 |       |        |        |
| 70.000  | -.0637 | -.2461 | -.3158 | .1746 | -.0089 | -.0497 | -.0476 |       |        |        |
| 90.000  | -.0256 | -.1772 | -.0499 | .1396 | -.0443 | -.1665 | -.0814 |       |        |        |
| 105.000 |        |        | .1409  | .1543 | -.1234 | -.2367 | -.1025 |       |        |        |
| 110.000 |        |        |        |       |        |        |        |       |        |        |
| 120.000 | -.0622 | -.0838 | .2798  | .1406 | -.1756 | -.2377 | -.2940 |       |        |        |
| 135.000 |        |        | .3080  | .3082 | -.1591 | -.1943 | -.1978 |       |        |        |
| 150.000 | .0441  | .1111  | .3147  | .3122 | -.0855 | -.0804 | -.1741 |       |        |        |
| 165.000 | .0621  |        | .3180  | .3180 | .1924  | .0125  | -.3581 |       |        |        |
| 180.000 | .0782  | .1345  | .3089  | .3900 |        |        |        |       |        |        |

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TABULATED PRESSURE DATA - OA148 ( AVES 11-073-1 )

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AVES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

(X08815)

ALPHA ( 3 ) = 3.932 BETA ( 2 ) = .189 MACH = 1.0960 Q = 598.54 P = 711.89 RN/L = 3.1895

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000   | .8193 | .3824 | .2875 | .1677 |       |       | .0889 | .0466  | .0160  | -.0340 | -.0364 | -.0566 | -.0425 |       |
| 20.000  |        |       | .4025 | .2592 | .1392 | .0695 |       | .0844 | .0306  |        |        |        |        |        |       |
| 40.000  |        |       | .4969 | .2908 | .1844 | .1373 |       | .0977 | .0263  | -.0194 | -.0590 | -.0314 | -.0770 | .0080  |       |
| 55.000  |        |       | .5433 | .3313 | .2388 | .1890 |       | .1292 | .0248  |        |        |        |        |        |       |
| 70.000  |        |       | .5476 | .3303 | .2376 | .2246 |       | .1297 | .0181  | -.3845 | -.2162 | -.2105 | -.1022 |        |       |
| 90.000  |        | .6815 | .5586 | .3467 | .2466 | .2474 |       | .1575 | -.0635 | -.4134 | -.2704 | -.2483 | -.0876 |        |       |
| 120.000 |        |       | .5606 | .3942 | .2930 | .3640 |       | .3389 | -.1175 | -.3857 | -.6085 | -.2181 | -.0824 |        |       |
| 140.000 |        |       |       |       |       |       |       |       | -.2166 |        |        |        |        |        |       |
| 150.000 |        | .5276 | .4218 | .3229 | .4155 |       |       | .7039 | -.5042 | -.6819 | -.4662 | -.2017 | -.0467 |        |       |
| 162.000 |        |       |       |       |       |       |       |       | .4181  |        |        |        |        |        |       |
| 165.000 |        |       |       |       |       |       |       |       | .4724  |        |        |        |        |        |       |
| 169.000 |        |       |       |       |       |       |       | .7832 |        | -.5577 | -.5780 | -.3545 | -.2231 | -.0365 |       |
| 174.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 180.000 | 1.3210 | .7112 | .5020 | .4011 | .3408 | .4395 | .8704 | .7637 | -.6752 | -.6749 | -.3353 | -.2381 | -.0339 |        |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |

PHI

|         |        |        |        |       |        |        |        |        |        |        |  |  |  |  |  |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--|--|--|--|--|
| 40.000  | .1623  | .1715  | .1319  | .0310 | -.0679 | -.1670 | -.2841 |        |        |        |  |  |  |  |  |
| 70.000  | .1388  |        | .1438  | .0433 | -.0991 | -.1267 | -.2848 |        | -.3102 | -.2836 |  |  |  |  |  |
| 90.000  | -.0756 | -.2390 | -.1643 | .531  | -.0524 | -.1488 | -.1674 |        | -.2476 | -.2272 |  |  |  |  |  |
| 105.000 | -.0377 | -.1640 | .0437  | .1321 | -.1082 | -.2008 | -.1941 |        |        |        |  |  |  |  |  |
| 110.000 |        |        | .1843  | .1185 | -.1798 | -.2672 | -.3107 |        |        |        |  |  |  |  |  |
| 120.000 | .0077  | -.0359 | .2495  | .1143 | -.2059 | -.2880 | -.3330 | -.4160 |        |        |  |  |  |  |  |
| 135.000 |        |        | .2881  | .3821 | -.1384 | -.2096 | -.2583 | -.3748 |        |        |  |  |  |  |  |
| 150.000 | .0556  | .0947  | .3042  | .4883 | -.0712 | -.1582 | -.2347 |        |        |        |  |  |  |  |  |
| 165.000 | .0744  |        | .3224  |       | .1281  | -.0591 | -.3571 |        |        |        |  |  |  |  |  |
| 180.000 | .0665  | .1164  | .3454  | .5222 |        |        |        |        |        |        |  |  |  |  |  |

ALPHA ( 3 ) = 3.935 BETA ( 3 ) = 4.249 MACH = 1.0960 Q = 598.54 P = 711.89 RN/L = 3.1895

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | .8048 | .3739 | .2651 | .1586 |       |       | .0893 | .0428  | .0075  | -.0347 | -.0350 | -.0666 | -.0438 |       |
| 20.000  |       |       | .3668 | .2404 | .1225 | .0521 |       | .0817 | .0239  |        |        |        |        |        |       |
| 40.000  |       |       | .4146 | .2397 | .1434 | .1042 |       | .0940 | .0141  | -.0310 | -.0797 | -.0658 | -.0968 | .0325  |       |
| 55.000  |       |       | .4299 | .2408 | .1574 | .1362 |       | .0898 | -.0098 |        |        |        |        |        |       |
| 70.000  |       |       | .4339 | .2340 | .1453 | .1599 |       | .0855 | -.0322 | -.4328 | -.2862 | -.2634 | -.0892 |        |       |
| 90.000  |       | .5348 | .4533 | .2477 | .1484 | .1820 |       | .1007 | -.0322 | -.4741 | -.3406 | -.2603 | -.0553 |        |       |
| 120.000 |       |       | .4757 | .3174 | .2085 | .3065 |       | .2496 | -.1450 | -.4705 | -.6525 | -.1923 | -.0466 |        |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

(XEBB15)

ALPHA ( 3 ) = 3.935 BETA ( 3 ) = 4.249

| SECTION ( 1 ) ORBITER FUSELAGE |       |       |       | DEPENDENT VARIABLE CP |       |       |       |       |        |        |        |        |        |        |       |
|--------------------------------|-------|-------|-------|-----------------------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| X/LB                           | .0000 | .0080 | .0230 | .0460                 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
| PHI                            |       |       |       |                       |       |       |       |       |        |        |        |        |        |        |       |
| 140.000                        |       |       |       |                       |       |       |       |       |        |        |        |        |        |        |       |
| 150.000                        |       |       |       |                       |       |       |       |       |        |        |        |        |        |        |       |
| 151.000                        |       |       |       |                       |       |       |       |       |        |        |        |        |        |        |       |
| 162.000                        |       |       |       |                       |       |       |       |       |        |        |        |        |        |        |       |
| 165.000                        |       |       |       |                       |       |       |       |       |        |        |        |        |        |        |       |
| 169.000                        |       |       |       |                       |       |       |       |       |        |        |        |        |        |        |       |
| 174.000                        |       |       |       |                       |       |       |       |       |        |        |        |        |        |        |       |
| 180.000                        |       |       |       |                       |       |       |       |       |        |        |        |        |        |        |       |
| X/LB                           | .6520 | .7290 | .7790 | .8210                 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |
|                                |       |       | .4989 | .3982                 | .3364 | .4269 | .8302 | .7510 |        | -.6775 | -.5787 | -.3624 | -.2527 | -.0559 |       |
|                                |       |       | .4798 | .3844                 | .2831 | .3783 |       | .6306 |        | -.3983 | -.6433 | -.3890 | -.2239 | -.0383 |       |
|                                |       |       |       |                       |       |       |       |       | .3254  |        |        |        |        |        |       |
|                                |       |       |       |                       |       |       |       |       | .3947  | -.5678 | -.6577 | -.3548 | -.2515 | -.0372 |       |
|                                |       |       |       |                       |       |       |       | .7396 |        |        |        |        |        |        |       |

| SECTION ( 1 ) ORBITER FUSELAGE |  | DEPENDENT VARIABLE CP |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|--------------------------------|--|-----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| X/LB                           |  | .0000                 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
| PHI                            |  |                       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000                         |  |                       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000                         |  |                       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000                         |  |                       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 105.000                        |  |                       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 110.000                        |  |                       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000                        |  |                       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 135.000                        |  |                       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000                        |  |                       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000                        |  |                       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000                        |  |                       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

ALPHA ( 4 ) = 7.884 BETA ( 1 ) = -3.865 MACH = 1.0986 Q = 599.29 P = 709.30 RV/L = 3.1886

| SECTION ( 1 ) ORBITER FUSELAGE |        | DEPENDENT VARIABLE CP |       |       |       |       |       |       |       |       |        |        |        |        |        |       |
|--------------------------------|--------|-----------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|
| X/LB                           |        | .0000                 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
| PHI                            |        |                       |       |       |       |       |       |       |       |       |        |        |        |        |        |       |
| .000                           | 1.2785 | .9396                 |       | .5063 | .3588 | .2529 |       |       | .1320 |       | .1214  | .0666  | .0255  | .0362  | .0023  | .0119 |
| 20.000                         |        | .5494                 |       | .5494 | .3800 | .2490 | .1536 |       | .1296 | .1192 | .1297  | .0683  | .0362  | .0624  | .0061  | .0438 |
| 40.000                         |        |                       | .6585 | .3176 | .4304 | .3176 | .2375 |       | .1683 |       | .1392  |        |        |        |        |       |
| 55.000                         |        |                       |       | .6777 | .4668 | .3585 | .2844 |       | .2065 |       | .1235  | -.2732 | -.1212 | -.1335 | -.2248 |       |
| 70.000                         |        |                       |       | .6478 | .4437 | .3257 | .2958 |       | .2058 |       | .0694  | -.3175 | -.1690 | -.2033 | -.2113 |       |
| 90.000                         |        | .7658                 |       | .6207 | .4264 | .3209 | .3101 |       | .2376 |       | .0056  | -.3337 | -.5158 | -.5627 | -.2739 |       |
| 120.000                        |        |                       |       | .5403 | .3842 | .2774 | .3526 |       | .4067 |       | -.0875 |        |        |        |        |       |
| 140.000                        |        |                       |       |       |       |       |       |       |       |       | -.2515 | -.7282 | -.5861 | -.2518 | -.1137 |       |
| 150.000                        |        |                       |       | .4321 | .3274 | .2419 | .3616 |       | .7594 | .4747 |        |        |        |        |        |       |
| 162.000                        |        |                       |       |       |       |       |       |       |       | .4941 |        |        |        |        |        |       |
| 165.000                        |        |                       |       |       |       |       |       |       |       |       | -.6023 | -.6763 | -.5071 | -.2324 | -.0851 |       |
| 169.000                        |        |                       |       |       |       |       |       |       | .7784 |       |        |        |        |        |        |       |
| 174.000                        |        |                       |       |       |       |       |       | .8527 |       |       |        |        |        |        |        |       |

.8527



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TABULATED PRESSURE DATA - QAI48 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (XEB015)

ALPHA ( 4 ) = 7.965 BETA ( 2 ) = .179

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

70.000 -.1124 -.3249 -.3774 .0618 -.0738 -.1369 -.1344  
 90.000 -.0694 -.2283 -.1683 .0188 -.1606 -.1792 -.1619  
 105.000 .0413 .0765 -.2407 -.2610 -.2965  
 110.000  
 120.000 -.0419 -.1082 .1440 .0856 -.2718 -.3263 -.3099  
 135.000 .1957 .3532 -.1785 -.2589 -.2948  
 150.000 .0432 -.0332 .2470 .5421 -.1149 -.2179 -.2780  
 165.000 .0673 .2843 .0820 -.1583 -.3598  
 180.000 .0784 -.0035 .3023 .5559

-.3832  
 -.3064

'LPHA ( 4 ) = 7.966 BETA ( 3 ) = 4.242 MACH = 1.0986 Q = 599.29 P = 709.30 RVL = 3.1886

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

1.2756 .9293 .5018 .3604 .2443 .1417 .1079 .0669 .0326 .0362 .0057 .0105  
 20.000 .4855 .3273 .2104 .1347 .1280 .0822 .0717 .0190 -.0225 -.0088 -.0353 .0077  
 40.000 .4874 .3145 .2170 .1575 .1384 .1053 .0381 .0123 -.2788 -.2660 -.1798  
 55.000 .4514 .2633 .1736 .1386 .1053 .0123 -.0802 -.4318 -.3200 -.1452  
 70.000 .4320 .2355 .1378 .1647 .1053 .1301 -.1808 -.4606 -.6280 -.2440 -.0879  
 90.000 .4263 .2339 .1333 .1917 .1301 .2805 -.3157 -.5980 -.7226 -.4432 -.1950 -.0526  
 120.000 .4086 .2581 .1632 .2978 .1301 .6165 .3241 .3762  
 140.000 .3810 .2982 .1943 .3354 .7103  
 150.000 .3610 .2315 .3679 .7944  
 165.000 .3110 .2315 .3679 .7944  
 180.000 .3110 .2315 .3679 .7944

PHI

1.2758 .5409 .3798 .3110 .2315 .3679 .7944 .7186 .9990 1.0180 1.0460  
 .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460  
 2361 .2522 .1985 .0891 -.0171 -.1121 -.2379  
 40.000 .2569 .2125 .1061 -.0430 -.1018 -.2507  
 70.000 -.0859 -.3200 .3330 .0216 .1606 .2617 .2253  
 90.000 -.0256 -.2056 .1261 -.0195 .2291 .2949 .3151  
 105.000 .0290 .0290 .0076 .3004 .3637 .4121  
 110.000  
 120.000 .0393 -.0815 .1072 -.0468 .3440 .4019 .5093  
 135.000 .2359 .2560 .2626 .2626 .3523 .3760  
 150.000 .0966 -.0015 .2879 .4190 .1963 .3152 .3748

-.2738  
 -.2462  
 -.4500  
 -.4321

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CALCULATED PRESSURE DATA - 0A148 ( AMES 1-073- )

PAGE TWO

AMES 11-073(0A148) -140 'E - .3 FUSE-AGE

(JF2812)

ALPHA ( 4 ) = 7.966 BETA ( 3 ) = 4.242

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE

| X/LB    | .6520 | .7290 | .7790 | .8210 | .8790 | .9210  | Q | 1.0150 | 1.0460 |
|---------|-------|-------|-------|-------|-------|--------|---|--------|--------|
| PHI     |       |       |       |       |       |        |   |        |        |
| 165.000 | .0943 |       | .2743 |       | .0116 | -.2550 |   |        |        |
| 180.000 | .0637 | .0032 | .2524 | .4883 |       |        |   |        |        |

ALPHA ( 5 ) = 11.925 BETA ( 1 ) = -3.850 MACH = Q = 598.93 P = 709.53 RN/L = 3.1856

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |       |       |       |       |       |       |       |        |        |        |        |        |       |
| .000    | 1.2319 | 1.0512 | .6335 | .4593 | .3545 |       |       | .2038 |       | .1813  | .1242  | .1093  | .1119  | .0907  | .2119 |
| 20.000  |        |        | .6799 | .4892 | .3548 | .2558 |       | .2145 |       | .1827  |        |        |        |        |       |
| 40.000  |        |        | .7452 | .5278 | .4085 | .3134 |       | .2530 |       | .2059  | .1349  | .1121  | .1375  | .0915  | .2415 |
| 55.000  |        |        | .6385 | .4347 | .3194 | .2868 |       | .2225 |       | .1734  |        |        |        |        |       |
| 70.000  |        |        | .6285 | .4324 | .3095 | .2851 |       | .2260 |       | .1517  | -.2374 | -.1160 | -.1264 | -.2380 |       |
| 90.000  |        | .7071  | .5694 | .3846 | .2811 | .2816 |       | .2471 |       | .1001  | -.3035 | -.1497 | -.1934 | -.2811 |       |
| 120.000 |        |        | .4447 | .2840 | .1834 | .2944 |       | .3962 |       | .0108  | -.3492 | -.5195 | -.7265 | -.3482 |       |
| 140.000 |        |        |       |       |       |       |       |       |       | -.0900 |        |        |        |        |       |
| 150.000 |        | .3142  | .2189 | .1294 | .3062 |       |       | .7496 |       | -.2200 | -.7836 | -.6833 | -.2917 | -.1401 |       |
| 151.000 |        |        |       |       |       |       |       |       | .4702 |        |        |        |        |        |       |
| 162.000 |        |        |       |       |       |       |       |       | .4787 |        |        |        |        |        |       |
| 165.000 |        |        |       |       |       |       |       |       |       | -.6594 | -.7349 | -.5499 | -.2480 | -.1038 |       |
| 169.000 |        |        |       |       |       |       | .8075 |       |       |        |        |        |        |        |       |
| 174.000 |        |        |       |       |       |       |       |       |       |        |        |        |        |        |       |
| 180.000 | 1.2319 | .4207  | .2415 | .2186 | .1412 | .3107 |       | .6600 |       | -.7523 | -.6806 | -.4312 | -.1981 | -.0602 |       |

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9930  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| .000    | .3209  | .3209  | .2597  | .1586  | .0602  | -.0609 | -.1914 |        | -.2199 | -.2161 |
| 40.000  | .3424  |        | .2896  | .1825  | .0170  | -.0126 | -.1980 |        | -.1905 | -.2043 |
| 70.000  | -.1394 | -.3843 | .4662  | -.0550 | -.0747 | -.2140 | -.2270 |        |        |        |
| 90.000  | -.0740 | -.2971 | -.3870 | -.0179 | -.0967 | -.2042 | -.3277 |        |        |        |
| 105.000 |        |        | -.1230 | .0362  | -.1440 | -.2658 | -.3484 |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.3940 |        |        |
| 120.000 | -.1789 | -.1973 | .0572  | .1080  | -.1949 | -.2639 | -.2489 | -.3552 |        |        |
| 135.000 |        |        | .0698  | .2874  | -.2100 | -.2040 | -.2529 |        |        |        |
| 150.000 | -.0574 | -.1796 | .0674  | .4481  | -.1423 | -.2095 | -.2891 |        |        |        |
| 165.000 | .0407  |        | .1613  |        | .0833  | -.1006 | -.3713 |        |        |        |
| 180.000 | .0796  | -.0386 | .2391  | .5353  |        |        |        |        |        |        |

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS FOUR

DATE 10 FEB 76

TABULATED PRESSURE DATA - OA148 ( AMES 11-073-1 )

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AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

(XEBB15)

ALPHA ( 5 ) = 11.933 BETA ( 2 ) = .177 MACH = 1.0981 Q = 598.93 P = 709.53 RN/L = 3.1856

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|
| PHI     |        |        |       |       |       |       |       |       |        |       |       |       |       |       |       |
| .000    | 1.2358 | 1.0537 | .6315 | .4701 | .3484 |       |       | .2063 | .1902  | .1336 | .1110 | .1144 | .1006 | .1787 |       |
| 20.000  |        |        | .6428 | .4601 | .3289 |       |       | .2029 | .1749  | .0983 | .0760 | .0940 | .0722 | .2002 |       |
| 40.000  |        |        | .6504 | .4572 | .3410 |       |       | .2124 | .1728  |       |       |       |       |       |       |
| 55.000  |        |        | .5778 | .3729 | .2660 |       |       | .1451 | .1251  |       |       |       |       |       |       |
| 70.000  |        |        | .5085 | .3166 | .2047 |       |       | .1574 | .1069  |       |       |       |       |       |       |
| 90.000  |        | .5615  | .4666 | .2847 | .1911 |       |       | .1902 | .0423  |       |       |       |       |       |       |
| 120.000 |        |        | .3830 | .2360 | .1355 |       |       | .3525 | -.0658 |       |       |       |       |       |       |
| 140.000 |        |        |       |       |       |       |       |       | -.1918 |       |       |       |       |       |       |
| 150.000 |        |        | .2967 | .2272 | .1175 |       |       | .6696 | -.4617 |       |       |       |       |       |       |
| 151.000 |        |        |       |       |       |       |       |       | .3973  |       |       |       |       |       |       |
| 152.000 |        |        |       |       |       |       |       |       | .4222  |       |       |       |       |       |       |
| 160.000 |        |        |       |       |       |       |       |       |        |       |       |       |       |       |       |
| 169.000 |        |        |       |       |       |       |       |       | -.6408 |       |       |       |       |       |       |
| 174.000 |        |        |       |       |       |       |       |       | -.7630 |       |       |       |       |       |       |
| 180.000 | 1.2358 | .4005  | .2566 | .1978 | .1365 | .3236 | .7634 | .6819 |        |       |       |       |       |       |       |

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|
| .000    | 1.2207 | 1.0375 | .6189 | .4635 | .3123 |       |       | .1981 | .1743  | .1268 | .1063 | .1078 | .0938 | .1731 |       |
| 20.000  |        |        | .5937 | .4213 | .2957 |       |       | .1781 | .1423  |       |       |       |       |       |       |
| 40.000  |        |        | .5456 | .3799 | .2662 |       |       | .1641 | .1103  |       |       |       |       |       |       |
| 55.000  |        |        | .4475 | .2600 | .1564 |       |       | .0752 | .0776  |       |       |       |       |       |       |
| 70.000  |        |        | .3923 | .2151 | .1057 |       |       | .1013 | .0674  |       |       |       |       |       |       |
| 90.000  |        | .4167  | .3098 | .2018 | .0907 |       |       | .1378 | -.0162 |       |       |       |       |       |       |
| 120.000 |        |        | .3231 | .1842 | .0734 |       |       | .2959 | -.1516 |       |       |       |       |       |       |

ALPHA ( 5 ) = 11.928 BETA ( 3 ) = 4.259 MACH = 1.0981 Q = 598.93 P = 709.53 RN/L = 3.1856

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(OA148) -140A/B/C/R ORB FUEELAGE

(51883X)

ALPHA ( 5 ) = 11.928 BETA ( 3 ) = 4.259

## SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

[illegible]

DATE 10 FEB 76  
TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
AMES 11-073(0A148) - 140A/B/C/R ORB FUSELAGE

(XE8816) ( 05 AUG 75 )

## PARAMETRIC DATA

## REFERENCE DATA

[illegible]

SCALE = .0500

SECTION / MOBITER EISEI AGE

[illegible]

DATE 10 FEB 76

## TABULATED PRESSURE DATA - OA148 ( AMES 11-073-1 )

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AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

(XEB816)

ALPHA ( 1 ) = -3.925 BETA ( 2 ) = .188 MACH = .90217 Q = 601.77 P = 1056.2 RV/L = 3.5811

## SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |        |        |        |        |       |        |        |        |        |        |        |        |        |
| .000    | 1.1963 | .3627 | -.0660 | -.1060 | -.1706 |        |       | -.2062 |        | -.2337 | -.1989 | -.0632 | -.0293 | .0066  | -.0146 |
| 20.000  |        |       | -.0465 | -.1238 | -.2140 | -.2228 |       | -.2378 |        | -.2618 |        |        |        |        |        |
| 40.000  |        |       | .1045  | -.1087 | -.2003 | -.2166 |       | -.3024 |        | -.3755 | -.3841 | -.0799 | -.0404 | -.0121 | -.0182 |
| 55.000  |        |       | .2466  | .0205  | -.0819 | -.1308 |       | -.2340 |        | -.3436 |        |        |        |        |        |
| 70.000  |        |       | .3492  | .1124  | -.0281 | -.0212 |       | -.1824 |        | -.3241 | -.7627 | -.0546 | .0430  | .0866  |        |
| 90.000  |        | .5814 | .4288  | .1849  | .0944  | .0134  |       | -.1683 |        | -.4582 | -.7266 | -.1199 | .0315  | .0760  |        |
| 120.000 |        |       | .5323  | .3466  | .2241  | .2342  |       | .0636  |        | -.4316 | -.6754 | -.1923 | .0109  | .0531  |        |
| 140.000 |        |       |        |        |        |        |       |        |        | -.4535 |        |        |        |        |        |
| 150.000 |        |       | .5078  | .4623  | .3547  | .3692  |       | .5789  | .2321  | -.7943 | -.8388 | -.0582 | .0185  | .0382  |        |
| 162.000 |        |       |        |        |        |        |       |        | .3103  |        |        |        |        |        |        |
| 165.000 |        |       |        |        |        |        |       |        |        | -.8426 | -.7411 | -.0383 | .0194  | .0420  |        |
| 159.000 |        |       |        |        |        |        | .8136 | .6852  |        | -.9492 | -.7368 | -.0203 | .0220  | .0387  |        |
| 174.000 |        |       |        |        |        |        |       | .6761  |        |        |        |        |        |        |        |
| 180.000 | 1.1963 | .8345 | .5913  | .4754  | .3970  | .4237  |       |        |        |        |        |        |        |        |        |
| X/LB    | .6520  | .7290 | .7790  | .8210  | .8730  | .9210  | .9600 | .9990  | 1.0180 | 1.0460 |        |        |        |        |        |

PHI

|         |        |        |        |        |        |        |        |        |        |        |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|--|--|--|--|
| .000    | -.1289 | -.1979 | -.2430 | -.3427 | -.4586 | -.4446 | -.2328 |        |        |        |  |  |  |  |  |
| 40.000  | -.1922 |        | -.2349 | -.3349 | -.4140 | -.3804 | -.2500 |        | -.0713 | -.1504 |  |  |  |  |  |
| 70.000  | .0123  | -.0580 | .0267  | .0993  | -.2095 | -.1140 | -.1138 |        | -.1276 | -.1679 |  |  |  |  |  |
| 90.000  | .0408  | -.0036 | .0889  | .1278  | -.2753 | -.1622 | -.1385 |        |        |        |  |  |  |  |  |
| 105.000 |        |        | .1562  | .1354  | -.4212 | -.2108 | -.2025 |        |        |        |  |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        | -.3156 |        |        |  |  |  |  |  |
| 120.000 | .0567  | .0712  | .2213  | .2370  | -.5075 | -.3134 | -.2769 | -.2574 |        |        |  |  |  |  |  |
| 135.000 |        |        | .3089  | .4594  | -.3581 | -.2437 | -.2335 |        |        |        |  |  |  |  |  |
| 150.000 | .0725  | .1289  | .3310  | .5103  | -.2359 | -.2357 | -.2333 |        |        |        |  |  |  |  |  |
| 165.000 | .0720  |        | .3326  |        | -.0312 | -.1940 | -.2278 |        |        |        |  |  |  |  |  |
| 180.000 | .0720  | .1427  | .3354  | .5533  |        |        |        |        |        |        |  |  |  |  |  |

ALPHA ( 1 ) = -3.933 BETA ( 3 ) = 4.285 MACH = .90217 Q = 601.77 P = 1056.2 RV/L = 3.5811

## SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580 | .1660  | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|--------|--------|--------|--------|-------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |        |        |        |        |       |        |       |        |        |        |        |        |        |
| .000    | 1.1804 | .3449 | -.0763 | -.1035 | -.1824 |        |       | -.2069 |       | -.2461 | -.1957 | -.0722 | -.0271 | .0048  | -.0220 |
| 20.000  |        |       | -.0696 | -.1290 | -.2142 | -.2198 |       | -.2238 |       | -.2570 |        |        |        |        |        |
| 40.000  |        |       | .0424  | -.1335 | -.1989 | -.1966 |       | -.2622 |       | -.3238 | -.3183 | -.0497 | -.0108 | -.0008 | .0062  |
| 55.000  |        |       | .1473  | -.0504 | -.1194 | -.1594 |       | -.2570 |       | -.3844 |        |        |        |        |        |
| 70.000  |        |       | .2309  | .0024  | -.0341 | -.0878 |       | -.2406 |       | -.4020 | -.8411 | -.1010 | .0466  | .0750  |        |
| 90.000  |        | .4211 | .3036  | .0810  | .0022  | -.0798 |       | -.2521 |       | -.5868 | -.7539 | -.2269 | .0462  | .0624  |        |
| 120.000 |        |       | .4201  | .2333  | .1058  | .1228  |       | -.0584 |       | -.5911 | -.8114 | -.2673 | -.0115 | .0261  |        |

4-4

6-4

DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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ALPHA ( 1 ) = -3.933 BETA ( 3 ) = 4.285

(XE8816)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

X/LB

PHI

140.000

150.000

151.000

162.000

165.000

169.000

174.000

180.000

ALPHA ( 2 ) = .017 BETA ( 1 ) = -3.871 MACH = .89983 O = 589.69 P = 1058.1 RN/L = 3.5748

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 20.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 55.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

.7848

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(91883X)

|  | ALPHA ( 2 ) = | .017 | BETA ( 1 ) = | -3.871 |
|--|---------------|------|--------------|--------|
|--|---------------|------|--------------|--------|

## SEC: ON ( ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

|      |         |        |       |       |       |       |       |       |         |         |        |       |       |       |       |
|------|---------|--------|-------|-------|-------|-------|-------|-------|---------|---------|--------|-------|-------|-------|-------|
| X/LB | .0000   | .0090  | .0230 | .0460 | .0700 | .1120 | .1590 | .1860 | .1770   | .2040   | .2510  | .3010 | .3760 | .4970 | .5740 |
| PHI  | 180.000 | 1.2051 | .7142 | .4581 | .3636 | .2916 | .3366 | .5894 | -1.0509 | -1.6942 | -.0794 | .0114 | .0027 |       |       |

三

[illegible]

**07/x**

二五

|        |        |        |        |        |        |        |        |
|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.000  | -.0373 | -.0863 | -.1582 | -.2689 | -.3824 | -.4371 | -.2617 |
| 40.000 | -.0943 | -.1431 | -.2568 | -.3487 | -.3669 | -.1414 | -.1495 |
|        |        |        |        |        |        |        | -.3743 |
|        |        |        |        |        |        |        | -.1478 |

|        |        |        |        |       |        |        |        |
|--------|--------|--------|--------|-------|--------|--------|--------|
| 70.000 | -.1085 | -.2116 | -.0170 | .1506 | -.0693 | -.0171 | -.0571 |
|--------|--------|--------|--------|-------|--------|--------|--------|

| Variable                | Mean  | Standard Deviation | Minimum | Maximum |
|-------------------------|-------|--------------------|---------|---------|
| Age                     | 35.2  | 12.5               | 18      | 65      |
| Gender                  | 0.5   | 0.5                | 0       | 1       |
| Education               | 12.8  | 1.5                | 9       | 16      |
| Income                  | 45000 | 15000              | 20000   | 80000   |
| Health                  | 0.8   | 0.2                | 0       | 1       |
| Marital Status          | 0.6   | 0.5                | 0       | 1       |
| Occupation              | 2.5   | 1.5                | 1       | 5       |
| Religion                | 1.2   | 0.8                | 1       | 5       |
| Political Affiliation   | 0.5   | 0.5                | 0       | 1       |
| Home Ownership          | 0.7   | 0.4                | 0       | 1       |
| Vehicle Ownership       | 0.9   | 0.3                | 0       | 1       |
| Travel Frequency        | 0.3   | 0.4                | 0       | 1       |
| Charitable Giving       | 0.1   | 0.3                | 0       | 1       |
| Volunteering            | 0.2   | 0.4                | 0       | 1       |
| Political Participation | 0.4   | 0.5                | 0       | 1       |
| Community Involvement   | 0.3   | 0.4                | 0       | 1       |
| Environmental Awareness | 0.6   | 0.5                | 0       | 1       |
| Health Insurance        | 0.9   | 0.3                | 0       | 1       |
| Life Satisfaction       | 0.7   | 0.4                | 0       | 1       |
| Overall Well-being      | 0.8   | 0.3                | 0       | 1       |

|        |       |       |        |        |        |
|--------|-------|-------|--------|--------|--------|
| 05.000 | .1385 | .2312 | -.2334 | -.1274 | -.1485 |
| 10.000 |       |       |        |        |        |

| 10.000 | - 0513 | - 0141 | 3536 | 3970 | - 2597 | - 2010 | - 1737 |
|--------|--------|--------|------|------|--------|--------|--------|
| 20 000 |        |        |      |      |        |        |        |

|        |       |       |       |        |        |        |
|--------|-------|-------|-------|--------|--------|--------|
| 20,000 | .6914 | .2328 | .2373 | .3337  | -.2018 | -.1737 |
| 35,000 |       | .3172 | .3597 | -.2687 | -.1395 | -.1713 |

|        |        |       |       |       |        |        |        |
|--------|--------|-------|-------|-------|--------|--------|--------|
| 50.000 | -.0122 | .0651 | .3126 | .2996 | -.2037 | -.1341 | -.1884 |
|--------|--------|-------|-------|-------|--------|--------|--------|

|        |         |       |         |        |
|--------|---------|-------|---------|--------|
|        | .2876   | .0470 | - .1037 | -.2241 |
| 65.000 | - .0077 |       |         |        |

|        |        |       |       |       |
|--------|--------|-------|-------|-------|
| 80.000 | -.0002 | .0781 | .2697 | .4118 |
|--------|--------|-------|-------|-------|

|                        |       |                         |       |                 |          |     |                  |
|------------------------|-------|-------------------------|-------|-----------------|----------|-----|------------------|
| $\rho_{\text{H}}(z) =$ | $0.7$ | $\beta_{\text{T}}(z) =$ | $197$ | $\text{MACH} =$ | $0.0087$ | $=$ | $600 \text{ CG}$ |
|------------------------|-------|-------------------------|-------|-----------------|----------|-----|------------------|

ALPHA ( 2 ) = .043    BETA ( 2 ) = .183    MACH = .89983    Q = 599.59    P = 1058.1    RN/L = 3.3748

## SECTION : ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

|      |       |       |       |       |       |       |       |       |       |       |       |       |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| X/LB | .0000 | .0230 | .0460 | .0700 | .1120 | .1580 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|

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|-------|------|--------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| ..... | .000 | 1.2084 | .5188 | .0730 | -.0035 | -.0893 | -.1705 | -.1984 | -.0782 | -.0165 | -.0266 | -.0282 |
|-------|------|--------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|

|        |       |        |        |        |        |        |
|--------|-------|--------|--------|--------|--------|--------|
| 20.000 | .0916 | -.0121 | -.1209 | -.1453 | -.1809 | -.1867 |
|--------|-------|--------|--------|--------|--------|--------|

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|-----|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|-------|
| .40 | .0000 | .2753 | .0052 | -.0852 | -.1202 | -.2003 | -.2898 | -.0613 | -.0111 | .0141 | .0445 |
|-----|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|-------|

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| .3255   | .050 |
| .7683   | .050 |
| .9577   | .050 |
| .9894   | .050 |
| 1.0211  | .050 |
| - .0367 | .050 |
| - .1520 | .050 |
| - .2401 | .050 |
| - .3218 | .050 |
| - .3957 | .050 |
| - .4604 | .050 |

[illegible][illegible]

40.000  
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| 50.000 | .4866 | .3639 | .2620 | .3042 | .5426 | ..... | -.8341 | -.9465 | -.1564 | .0231 | .0152 |
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| Year | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 | 2062 | 2063 | 2064 | 2065 | 2066 | 2067 | 2068 | 2069 | 2070 | 2071 | 2072 | 2073 | 2074 | 2075 | 2076 | 2077 | 2078 | 2079 | 2080 | 2081 | 2082 | 2083 | 2084 | 2085 | 2086 | 2087 | 2088 | 2089 | 2090 | 2091 | 2092 | 2093 | 2094 | 2095 | 2096 | 2097 | 2098 | 2099 | 2100 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1993 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 | 2062 | 2063 | 2064 | 2065 | 2066 | 2067 | 2068 | 2069 | 2070 | 2071 | 2072 | 2073 | 2074 | 2075 | 2076 | 2077 | 2078 | 2079 | 2080 | 2081 | 2082 | 2083 | 2084 | 2085 | 2086 | 2087 | 2088 | 2089 | 2090 | 2091 | 2092 | 2093 | 2094 | 2095 | 2096 | 2097 | 2098 | 2099 | 2100 |

[illegible]

74.000  
.7662

|        |        |       |       |       |       |       |       |        |        |        |       |       |
|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|-------|-------|
| 83.030 | 1.2094 | .7012 | .4744 | .3682 | .2922 | .3411 | .6242 | -.9324 | -.8778 | -.0502 | .0205 | .0126 |
|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|-------|-------|

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|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| .000 | -.0369 | -.0866 | -.1566 | -.2775 | -.3962 | -.4432 | -.2578 | -.0836 | -.1568 |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|

|        |        |        |        |        |        |        |        |        |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 40.000 | -.0659 | -.1417 | -.2629 | -.3713 | -.3900 | -.2697 | +.1278 | -.1625 |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|

DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 1-073-1 )

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AMES 11-073(0A148) -140A/B/C R ORB FUSELAGE

(XE6816)

ALPHA ( 2 ) = .043 BETA ( 2 ) = .183

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9300  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |       |        |        |        |        |        |        |
| 70.000  | -.1194 | -.2234 | -.0471 | .0743 | -.2272 | -.1002 | -.1060 |        |        |        |
| 90.000  | -.0759 | -.1450 | .0277  | .0911 | -.3189 | -.1550 | -.1440 |        |        |        |
| 105.000 |        |        | .0910  | .1249 | -.4369 | -.1994 | -.1986 |        |        |        |
| 110.000 |        |        |        |       |        |        |        | .3069  |        |        |
| 120.000 | -.0291 | -.0195 | .1697  | .2362 | -.5102 | -.2878 | -.2583 | -.2445 |        |        |
| 135.000 |        |        | .2425  | .3991 | -.3937 | -.2506 | -.2359 |        |        |        |
| 150.000 | -.0002 | .0613  | .2651  | .4513 | -.3120 | -.2567 | -.2467 |        |        |        |
| 165.000 | .0033  | .2656  |        |       | -.1030 | -.2426 | -.2180 |        |        |        |
| 180.000 | .0040  | .0763  | .2738  | .4797 |        |        |        |        |        |        |

ALPHA ( 2 ) = .037 BETA ( 3 ) = .4263 MACH = .89983 Q = 599.69 P = 1058.1 RN/L = 3.5748

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460  | .0700  | .1120  | .1580 | .1660  | .1770   | .2040  | .2510  | .3010  | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|--------|--------|--------|-------|--------|---------|--------|--------|--------|-------|-------|-------|
| PHI     |        |       |       |        |        |        |       |        |         |        |        |        |       |       |       |
| 20.000  | 1.1932 | .5026 | .0636 | -.0055 | -.0946 | -.1524 |       | -.1530 | -.1758  | -.1929 | -.0814 | -.0183 | .0260 | .0177 |       |
| 40.000  |        |       | .0646 | -.0300 | -.1202 | -.1155 |       | -.1686 | -.2120  | -.2823 | -.0541 | .0004  | .0170 | .0517 |       |
| 55.000  |        |       | .1530 | -.0184 | -.1027 | -.0786 |       | -.1722 | -.2831  |        |        |        |       |       |       |
| 70.000  |        |       | .2197 | .0295  | -.0428 | -.0786 |       | -.1786 | -.3341  | -.7845 | -.0975 | .0099  | .0333 |       |       |
| 90.000  |        | .4118 | .2629 | .0503  | -.0283 | -.0403 |       | -.1849 | -.4991  | -.7831 | -.1700 | .0189  | .0299 |       |       |
| 120.000 |        |       | .3079 | .0844  | -.0177 | -.0268 |       | -.1887 | -.5628  | -.7831 | -.2671 | .0141  | .0175 |       |       |
| 140.000 |        |       | .3758 | .2021  | .0889  | .1306  |       | -.0231 | -.7581  |        |        |        |       |       |       |
| 150.000 |        |       | .4254 | .3213  | .2182  | .2546  |       | .4576  | -.9190  | -.9653 | -.1441 | .0163  | .0054 |       |       |
| 151.000 |        |       |       |        |        |        |       |        | .0946   |        |        |        |       |       |       |
| 162.000 |        |       |       |        |        |        |       |        | .1823   |        |        |        |       |       |       |
| 165.000 |        |       |       |        |        |        |       |        |         | -.8728 | -.8713 | -.0934 | .0127 | .0063 |       |
| 174.000 |        |       |       |        |        |        |       |        |         |        |        |        |       |       |       |
| 180.000 | 1.1932 | .6854 | .4686 | .3630  | .2855  | .3355  | .7118 | .5944  | -.10983 | -.8703 | -.0828 | .0134  | .0016 |       |       |

X/LB

PHI

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|
| 40.000  | -.0353 | -.0826 | -.1511 | -.2718 | -.3772 | -.4281 | -.2686 |       |        |        |
| 70.000  | -.0471 | -.1398 | -.2591 | -.3662 | -.3875 | -.2272 | -.2772 |       |        |        |
| 90.000  | -.1159 | -.1931 | .0254  | .3222  | -.2857 | -.1575 |        |       |        |        |
| 105.000 | -.0679 | -.1214 | .0006  | .0330  | .3985  | -.4334 | -.1853 |       |        |        |
| 110.000 |        |        | .0639  | .0413  | -.5194 | -.4959 | -.1990 |       |        |        |
| 120.000 | -.0220 | -.0220 | .1184  | .0935  | -.6452 | -.6148 | -.2199 |       |        |        |
| 135.000 |        |        | .2165  | .3412  | -.5239 | -.5077 | -.2546 |       |        |        |
| 150.000 | .0032  | .0569  | .2474  | .4210  | -.4035 | -.4721 | -.3741 |       |        |        |

DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A:48) -140A/B/C/R ORB FUSELAGE

(XE8816)

ALPHA ( 2 ) = .037 BETA ( 3 ) = 4.263

SECTION ( 1 ) ORBITTER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 -.0010 .2546  
180.000 -.0091 .0789 .2761 .4231  
-.1859 -.4093 -.2240

ALPHA ( 3 ) = 3.891 BETA ( 1 ) = -3.977 MACH = .90107 Q = 600.53 P = 1056.6 RN/L = 3.5722

SECTION ( 1 ) ORBITTER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

1.1380 .6046 .2149 .1055 .0121  
20.000 .2621 .1093 -.0021 -.0675  
40.000 .4155 .1699 .0631 -.0019  
55.000 .5011 .2801 .1808 .0937  
70.000 .5196 .2941 .1959 .1353  
90.000 .6912 .5269 .3135 .1933 .1614  
120.000 .5002 .3337 .2231 .2590  
140.000 .4234 .2981 .2131 .2741  
150.000  
162.000  
165.000  
169.000  
174.000  
180.000  
-.0930  
-.1048  
-.1239  
-.1396  
-.1677  
-.1710  
-.1298  
-.2061  
-.2566  
-.3507  
-.4517  
-.1047  
-.4277  
-.0121  
-.0172  
-.0632  
-.0552  
-.1024  
-.0291  
-.0192  
-.0572  
-.0885  
-.2798  
-.3084  
-.9536  
-.8826  
-.4206  
-.0374  
-.0094  
-1.0846  
-.9178  
-.2842  
-.0426  
-.0018  
-.0591  
-.1402  
-.1398  
-.1485  
-.2658  
-.2152  
-.1558  
-.1856  
-.1894  
-.2162  
-.0032  
-.1298  
-.3454

X/LB

PHI

.7457

.6405

.5428

.9990

1.0180

1.0460

.9600

.9210

.8790

.8210

.7790

.7290

.6520

.5788

.3440

.2652

.1979

.2670

.2670

.8210

.7790

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.6520

.5788

.3440

.2652

.1979

.2670

DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8816)

ALPHA ( 3 ) = 4.016 BETA ( 2 ) = .188 MACH = .90107 Q = 600.53 P = 1056.6 RN/L = 3.5722

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460  | .0700  | .1120 | .1580 | .1660  | .1770    | .2040  | .2510    | .3010  | .3780  | .4970 | .5740 |
|---------|--------|-------|-------|--------|--------|-------|-------|--------|----------|--------|----------|--------|--------|-------|-------|
| PHI     | .000   | .6672 | .2213 | .1109  | .0149  |       |       | -.0857 | -.1031   | -.1298 | -.0595   | .0114  | -.0578 | .0839 |       |
| 20.000  |        | .2427 | .1059 | -.0083 | -.0627 |       |       | -.0985 | -.1167   | -.1317 | -.0454   | .0233  | .0545  | .1108 |       |
| 40.000  |        | .3460 | .1367 | .0333  | -.0127 |       |       | -.0919 | -.1591   | -.1860 | -.0454   | .0233  | .0545  | .1108 |       |
| 55.000  |        | .3683 | .1857 | .0939  | .0304  |       |       | -.0685 | -.2000   | -.2627 | -.1500   | -.0295 | .0100  |       |       |
| 70.000  |        | .3969 | .1866 | .0906  | .0613  |       |       | -.0770 | -.3103   | -.3189 | -.1788   | -.0217 | .0113  |       |       |
| 90.000  |        | .5373 | .4135 | .2036  | .0927  | .0804 |       | -.0576 | -.3820   | -.6956 | -.2953   | -.0165 | -.0141 |       |       |
| 120.000 |        | .4166 | .2481 | .1443  | .1984  |       |       | .1181  | -.5015   | -.8732 | -.1.0285 | -.3385 | .0465  | .0058 |       |
| 150.000 |        | .3855 | .2793 | .1852  | .2521  |       |       | .5180  | .1901    |        |          |        |        |       |       |
| 162.000 |        |       |       |        |        |       |       |        | .2420    |        |          |        |        |       |       |
| 165.000 |        |       |       |        |        |       |       |        |          | -.9692 | -.9351   | -.2285 | .0396  | .0091 |       |
| 169.000 |        |       |       |        |        |       |       |        |          |        |          |        |        |       |       |
| 174.000 |        |       |       |        |        |       |       |        |          |        |          |        |        |       |       |
| 180.000 | 1.2023 | .5641 | .3590 | .2718  | .2041  | .2734 | .7213 |        | -.1.0134 | -.9427 | -.1713   | .0372  | .0081  |       |       |

X/LB

PHI

| X/LB    | .0546  | .0039  | -.0771 | -.2046 | -.3093 | -.3645 | -.4257 | -.0608 | -.1390 | -.2815 | -.2127 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 40.000  |        |        | -.0608 | -.1895 | -.2898 | -.3270 | -.3341 |        |        |        |        |
| 70.000  |        | -.4332 | -.1175 | .0528  | -.1672 | -.0795 | -.0942 | -.1117 | -.1461 |        |        |
| 90.000  |        | -.1597 | -.3390 | .0297  | -.2676 | -.1316 | -.1328 |        |        |        |        |
| 105.000 |        |        | .0543  | .0716  | -.3823 | -.1831 | -.1731 |        |        |        |        |
| 110.000 |        |        |        |        |        |        |        |        |        |        |        |
| 120.000 | -.1153 | -.1320 | .1170  | .1794  | -.5210 | -.2676 | -.2218 |        |        |        |        |
| 135.000 |        |        | .1722  | .3832  | -.4233 | -.2352 | -.2207 |        |        |        |        |
| 150.000 | -.0575 | -.0219 | .1940  | .4506  | -.3384 | -.2582 | -.3280 |        |        |        |        |
| 165.000 | -.0469 |        | .2030  |        | -.1363 | -.2526 | -.1970 |        |        |        |        |
| 180.000 | -.0243 | .0107  | .2162  | .4388  |        |        |        |        |        |        |        |

X/LB

ALPHA ( 3 ) = 4.017 BETA ( 3 ) = .257 MACH = .90107 Q = 600.53 P = 1056.6 RN/L = 3.5722

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460  | .0700  | .1120 | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|-------|-------|-------|--------|--------|-------|-------|--------|--------|--------|--------|--------|--------|-------|-------|
| PHI     | .000  | .6541 | .2124 | .1059  | .0040  |       |       | -.0693 | -.1070 | -.1284 | -.0713 | .0021  | .0618  | .0742 |       |
| 20.000  |       | .2035 | .0760 | -.0261 | -.0654 |       |       | -.1021 | -.1279 | -.1508 | -.0423 | .0080  | .0423  | .1050 |       |
| 40.000  |       | .2545 | .0816 | -.0015 | -.0401 |       |       | -.1184 | -.2021 | -.2128 | -.0873 | .0080  | .0423  | .1050 |       |
| 55.000  |       | .2695 | .0880 | .0099  | -.0326 |       |       | -.1368 | -.2567 | -.7201 | -.1453 | -.0344 | -.0003 |       |       |
| 70.000  |       | .2741 | .0755 | -.0034 | -.0101 |       |       | -.1307 | -.4073 | -.7899 | -.1887 | -.0107 | .0068  |       |       |
| 90.000  |       | .3756 | .2965 | .0913  | -.0038 | .0083 |       | -.0161 | -.5222 | -.7783 | -.2837 | .0172  | .0045  |       |       |
| 120.000 |       | .3241 | .1605 | .0584  | .1293  |       |       |        |        |        |        |        |        |       |       |

X/LB

PHI

DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB16)

ALPHA ( 3 ) = 4.017 BETA ( 3 ) = 4.257

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

PHI  
140.000  
150.000  
162.000  
165.000  
169.000  
174.000  
180.000

PHI  
140.000  
150.000  
162.000  
165.000  
169.000  
174.000  
180.000

PHI  
140.000  
150.000  
162.000  
165.000  
169.000  
174.000  
180.000

PHI

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

ALPHA ( 4 ) = 7.978 BETA ( 1 ) = -3.868 MACH = .90107 Q = 600.53 P = 1056.6 RN/L = 3.5741

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

PHI

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

PHI  
140.000  
150.000  
162.000  
165.000  
169.000  
174.000  
180.000

PHI  
140.000  
150.000  
162.000  
165.000  
169.000  
174.000  
180.000

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

DATE 10 FEB 76 TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB816)

ALPHA ( 4 ) = 7.978 BETA ( 1 ) = -3.868

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | PHI | 180.000 | 1.1586 | .4208  | .2167  | .1656  | .1047  | .1989  | .4971  | -.9127 | -.6463 | -.4978 | -.1330 | .5018 |
|---------|-----|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| X/LB    | PHI | 180.000 | .6520  | .7297  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |       |
| PHI     |     | .000    | .1306  | .0807  | -.0060 | -.1324 | -.2141 | -.3495 | -.4774 | -.0397 | -.1308 |        |        |       |
| 40.000  |     | .1358   | .0186  | -.1131 | -.2198 | -.2950 | -.4509 |        |        | -.1325 | -.1339 |        |        |       |
| 70.000  |     | -.3060  | -.5703 | -.1369 | .0885  | -.0955 | -.0661 | -.0836 |        |        |        |        |        |       |
| 90.000  |     | -.2507  | -.4870 | -.0502 | .0650  | -.1386 | -.1202 | -.1404 |        |        |        |        |        |       |
| 105.000 |     |         | .0633  | .0771  | -.2146 | -.1751 | -.1775 |        |        |        |        |        |        |       |
| 110.000 |     |         |        |        |        |        |        |        |        |        |        |        |        |       |
| 120.000 |     | -.3082  | -.2618 | .1007  | .0717  | -.3347 | -.2320 | -.1926 |        |        |        |        |        |       |
| 135.000 |     |         | .0913  | .2024  | -.3465 | -.2024 | -.2114 |        |        |        |        |        |        |       |
| 150.000 |     | -.1522  | -.1076 | .0974  | .2651  | -.2783 | -.1864 | -.2111 |        |        |        |        |        |       |
| 165.000 |     | -.1281  | .0999  |        | -.0697 | -.1631 | -.2093 |        |        |        |        |        |        |       |
| 180.000 |     | -.1214  | -.0767 | .1014  | .3084  |        |        |        |        |        |        |        |        |       |

ALPHA ( 4 ) = 7.924 BETA ( 2 ) = .181 MACH = .90107 Q = 600.53 P = 1056.6 RN/L = 3.5741

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | PHI | 180.000 | .0000  | .0380  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-----|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |     | .000    | 1.1690 | .8059  | .3649  | .2250  | .1164  |        |        | -.0124 |        | -.0324 | -.0595 | -.0177 | .0405  | .1225  | .1478 |
| 20.000  |     |         | .3794  |        | .2193  | .2193  | .0986  | .0259  |        | -.0183 |        | -.0464 | -.0533 | -.0473 | .0476  | .1036  | .1764 |
| 40.000  |     |         | .4422  |        | .2359  | .2359  | .1335  | .0677  |        | -.0056 |        | -.0533 | -.1162 | -.0473 | .0476  | .1036  | .1764 |
| 55.000  |     |         | .4276  |        | .2238  | .2238  | .1278  | .0592  |        | -.0349 |        | -.1062 | -.0911 | -.2225 | -.0870 | -.0156 |       |
| 70.000  |     |         | .3935  |        | .1954  | .1954  | .0922  | .0701  |        | -.0455 |        | -.1528 | -.0992 | -.2488 | -.0808 | -.0256 |       |
| 90.000  |     |         | .3790  | .4866  | .1861  | .1861  | .0870  | .0817  |        | -.0238 |        | -.2512 | -.0992 | -.2488 | -.0808 | -.0256 |       |
| 120.000 |     |         | .3322  |        | .1821  | .1821  | .0858  | .1659  |        | .1347  |        | -.3593 | -.7057 | -.3273 | -.1199 | -.0646 |       |
| 140.000 |     |         | .2704  |        | .1812  | .1812  | .0989  | .1941  |        | .5004  |        | -.8359 | -.6392 | .4626  | -.0267 | -.0144 |       |
| 151.000 |     |         |        |        |        |        |        |        |        | .1740  |        |        |        |        |        |        |       |
| 162.000 |     |         |        |        |        |        |        |        |        | .2054  |        |        |        |        |        |        |       |
| 165.000 |     |         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 169.000 |     |         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 174.000 |     |         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 180.000 |     |         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| X/LB    | PHI | 180.000 | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |     | .000    | .1346  | .0851  | .0036  | -.1285 | -.2172 | -.3518 | -.4706 | -.0453 | -.1309 |        |        |        |        |        |       |
| 40.000  |     | .1401   | .0239  | -.1088 | -.2327 | -.2978 | -.4317 |        |        | -.1093 | -.1442 |        |        |        |        |        |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/E/C/R ORB FUSELAGE

(XEB816)

ALPHA ( 4 ) = 7.924 BETA ( 2 ) = .181

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

70.000 -.3098 -.6264 -.1832 .0178 -.1949 -.1429 -.1287  
 90.000 -.2517 -.4716 -.1220 .0103 -.2870 -.1923 -.1511  
 105.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
 110.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
 120.000 -.2143 -.2502 .0098 .0777 -.4901 -.3566 -.2303  
 135.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
 150.000 -.1265 -.1221 .1067 .4023 -.3600 -.2982 -.2324  
 165.000 -.1102 .1282 .1282 .1282 .1282 .1282 .1282  
 180.000 -.1127 -.0841 .1313 .3802

ALPHA ( 4 ) = 7.921 BETA ( 3 ) = 4.257 MACH = .90107 Q = 600.53 P = 1056.6 RN/L = 3.5741

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

20.000 1.1511 .7926 .3538 .2185 .1061 .0117  
 40.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
 55.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
 70.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
 90.000 .3317 .2679 .0860 .0049 .0242 .0245  
 120.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
 140.000 .2312 .1544 .0614 .1654  
 150.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
 162.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
 165.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
 169.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
 174.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
 180.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000

X/LB .1511 .3824 .2350 .1440 .0983 .2020 .6247 .5172 .5250 .9990 1.0180 1.0460

PHI

70.000 .1353 .0842 .0010 .1321 .2092 .3514 .4712  
 90.000 .1398 .0177 .0177 .1078 .2366 .3318 .4128  
 105.000 .3363 .5780 .2585 .0533 .2742 .2408 .1632  
 120.000 .2340 .4289 .1794 .0698 .3609 .3175 .1846  
 135.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
 150.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000

2

(X88818)

ALPHA ( 4 ) = 7.921 BETA ( 3 ) = 4.257

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 .1124  
180.000 -.1254 -.0799 .1180 .3741  
-.2332 -.4595 -.1974

ALPHA ( 5 ) = 11.916 BETA ( 1 ) = -3.856 MACH = .90080 Q = 599.65 P = 1057.6 RN/L = 3.5745

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1680 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.0984 .9210 .4982 .3343 .2186  
.20.000 .5461 .3603 .2276 .1325  
40.000 .6165 .4014 .2861 .1941  
55.000 .5665 .3634 .2320 .1535  
70.000 .1917 .3013 .1816 .1514  
90.000 .4302 .2530 .1577 .1398  
120.000 .2989 .1451 .0595 .1419  
140.000 .1692 .0820 .0194 .1419  
151.000  
162.000  
165.000  
169.000  
174.000  
180.000  
1.0984 .2548 .0974 .0730 .0280 .1443  
.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460  
-.8314 -.5811 -.5684 -.2021 -.0511  
-.7126 -.6038 -.5629 -.1914 -.0121

X/LB

PHI

.000 .2073 .1553 .0717 -.0576 -.1545 -.3155 -.4379  
40.000 .2332 .1017 -.0325 -.1949 -.2605 -.4644  
70.000 -.4464 -.7261 -.1748 -.0047 -.2517 -.1817 -.1393  
90.000 -.3417 -.5720 -.0528 -.0332 -.2632 -.2365 -.1808  
105.000 .0104 .0652 -.3241 -.2770 -.2230  
110.000  
120.000 .0085 .1235 -.3862 -.3521 -.2230  
135.000 .0153 .1972 -.3861 -.3012 -.2463  
150.000 -.2515 -.2213 -.0156 .2785 -.2883 -.2580  
165.000 -.2090 .0186 -.1096 -.2000 -.2100  
180.000 -.1619 -.1131 .0835 .3417

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB16)

ALPHA ( 5 ) = 11.928 BETA ( 2 ) = .182 MACH = .90000 Q = 599.65 P = 1057.6 RN/L = 3.5745

DEPENDENT VARIABLE CP

SECTION ( 1 ) ORBITER FUSELAGE

| X/LB    | .0000 | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     | .000  | 1.1073 | .9322 | .5119 | .3393 | .2279 | .1257 | .0780 | .0454 | .0225 | .0046 | .1013 | .1810 | .2080 |       |
| 20.000  |       |        |       | .5211 | .3357 | .2104 | .1257 | .0707 | .0301 |       |       |       |       |       |       |
| 40.000  |       |        |       | .5265 | .3328 | .2095 | .1331 | .0724 | .0015 |       |       |       |       |       |       |
| 55.000  |       |        |       | .4437 | .2468 | .1453 | .0582 | .0185 |       |       |       |       |       |       |       |
| 70.000  |       |        |       | .3709 | .1886 | .0829 | .0742 | .0185 |       |       |       |       |       |       |       |
| 90.000  |       | .4197  |       | .3273 | .1560 | .0718 | .0764 | .0027 |       |       |       |       |       |       |       |
| 120.000 |       |        |       | .2419 | .0490 | .0217 | .1266 | .1422 |       |       |       |       |       |       |       |
| 140.000 |       |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |        |       | .1600 | .0917 | .0155 | .1441 | .4900 |       |       |       |       |       |       |       |
| 151.000 |       |        |       |       |       |       |       | .1879 |       |       |       |       |       |       |       |
| 162.000 |       |        |       |       |       |       |       | .1870 |       |       |       |       |       |       |       |
| 165.000 |       |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |        |       |       |       |       |       |       |       |       |       |       |       |       |       |

| X/LB    | 1.1073 | .2466 | .1202 | .0685 | .0250 | .1582 | .6108 | .5187 | .4914 | .7939 | .6004 | .5345 | .2016 | .0005 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 180.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |

PHI

| X/LB    | .000 | .0734 | .0538 | .1498 | .3073 | .4324 | .4324 | .1036 | .1223 | .1085 | .1291 | .3149 | .2344 |
|---------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 40.000  |      |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |      |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |      |       |       |       |       |       |       |       |       |       |       |       |       |
| 105.000 |      |       |       |       |       |       |       |       |       |       |       |       |       |
| 110.000 |      |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |      |       |       |       |       |       |       |       |       |       |       |       |       |
| 135.000 |      |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |      |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |      |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |      |       |       |       |       |       |       |       |       |       |       |       |       |

ALPHA ( 5 ) = 11.917 BETA ( 3 ) = 4.273 MACH = .90000 Q = 599.65 P = 1057.6 RN/L = 3.5745

DEPENDENT VARIABLE CP

SECTION ( 1 ) ORBITER FUSELAGE

| X/LB    | .0000 | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     | .000  | 1.0881 | .9135 | .4897 | .3315 | .2113 | .0933 | .0706 | .0419 | .0226 | .0508 | .0964 | .1787 | .2072 |       |
| 20.000  |       |        |       | .4638 | .2887 | .1707 | .0933 | .0419 | .0025 |       |       |       |       |       |       |
| 40.000  |       |        |       | .4123 | .2415 | .1413 | .0616 | .0071 |       |       |       |       |       |       |       |
| 55.000  |       |        |       | .3006 | .1092 | .0266 | .0453 | .1078 |       |       |       |       |       |       |       |
| 70.000  |       |        |       | .2390 | .0655 | .0126 | .0003 | .0848 |       |       |       |       |       |       |       |
| 90.000  |       | .2555  |       | .2189 | .0517 | .0181 | .0114 | .0609 |       |       |       |       |       |       |       |
| 120.000 |       |        |       | .1749 | .0427 | .0266 | .0919 | .0753 |       |       |       |       |       |       |       |

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TABLED PRESSURE DATA - 0A148 ( ANES 11-073-1 )

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$$\text{ALPHA} (5) = 11.917 \quad \text{BETA} (3) = 4.273$$

(XEBB18)

ANES 11-073(CA148) -140A/B/C/R ORB FUSELAGE

SECTION (1) ORBITER FUSELAGE

[illegible]

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APES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB817) ( 05 AUG 75 )

## REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6900 IN. XO  
 LREF = 474.8000 IN. YMRP = .0000 IN. YO  
 BREF = 936.0680 IN. ZMRP = 375.0000 IN. ZO  
 SCALE = .0300

ALPHA ( 1 ) = -4.112 BETA ( 1 ) = -7.854 MACH = .58694 Q = 595.26 P = 23.0.4 RN/L = 4.8216

## PARAMETRIC DATA

RUDER = .0.0 SPDRK = 35.000  
 BOFLAP = .0.000 L-ELVN = .000  
 R-ELVN = .0.000 MACH = .600

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | .1321 | .2211 | .2150 | .2269 | .2857 | .2865 | .1789 | .1503 | .1254  | .0961  | .0790  | .0666  | .0791  |       |
| 20.000  | .000  | .2026 | .0180 | .2364 | .2865 | .3142 | .3024 | .2462 | .2058 | .3340  | .2692  | .1991  | .1727  | .1507  | .1526 |
| 40.000  | .000  | .2766 | .0576 | .2666 | .3024 | .3142 | .3024 | .1816 | .1616 | .1493  | .1272  | .1065  | .0599  | .1065  |       |
| 55.000  | .000  | .4457 | .2330 | .2330 | .1501 | .0843 | .1501 | .1280 | .1280 | .1337  | .1337  | .0403  | .0426  | .0925  |       |
| 70.000  | .7393 | .5473 | .3344 | .3344 | .2377 | .1338 | .1338 | .1460 | .1460 | .1798  | .1798  | .1625  | .0056  | .0470  |       |
| 90.000  | .000  | .6224 | .4595 | .4595 | .3479 | .3197 | .1909 | .1871 | .1871 | .3117  | .3117  | .1025  | .0365  | .0056  |       |
| 120.000 | .000  | .5747 | .4266 | .4266 | .3498 | .3500 | .5637 | .2513 | .2513 | .2570  | .2570  | .1257  | .0507  | .0158  |       |
| 150.000 | .000  | .000  | .000  | .000  | .000  | .000  | .000  | .5725 | .5725 | .9354  | .9354  | .1257  | .0507  | .0158  |       |
| 162.000 | .000  | .000  | .000  | .000  | .000  | .000  | .000  | .3694 | .3694 | .1714  | .1714  | .1319  | .0723  | .0395  |       |
| 165.000 | .000  | .000  | .000  | .000  | .000  | .000  | .000  | .9990 | .9990 | .10180 | .10180 | .10180 | .10180 | .10180 |       |
| 174.000 | .000  | .000  | .000  | .000  | .000  | .000  | .000  | .000  | .000  | .000   | .000   | .000   | .000   | .000   |       |
| 180.000 | .000  | .000  | .000  | .000  | .000  | .000  | .000  | .000  | .000  | .000   | .000   | .000   | .000   | .000   |       |

## PHI

| X/LB    | .000  | .1492 | .1907 | .2475 | .2265 | .2618 | .2469 |
|---------|-------|-------|-------|-------|-------|-------|-------|
| 40.000  | .000  | .2182 | .2012 | .2519 | .2276 | .2172 | .2420 |
| 70.000  | .0222 | .0025 | .0786 | .1817 | .0363 | .0163 | .0630 |
| 90.000  | .0482 | .0499 | .1281 | .2215 | .0033 | .0430 | .1167 |
| 105.000 | .000  | .1762 | .1762 | .3354 | .0922 | .0939 | .1598 |
| 110.000 | .000  | .000  | .000  | .000  | .000  | .000  | .000  |
| 120.000 | .0359 | .0844 | .2499 | .4968 | .1321 | .1113 | .1477 |
| 135.000 | .000  | .2881 | .4838 | .4838 | .1019 | .0668 | .1418 |
| 150.000 | .0257 | .0926 | .2710 | .3399 | .0815 | .0469 | .1189 |
| 165.000 | .0082 | .0026 | .2206 | .1551 | .1551 | .0119 | .2027 |
| 180.000 | .0169 | .0426 | .1757 | .3117 | .3117 | .3117 | .3117 |





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TABULATED PR: SURE DATA - 0A148 ( AMES 11-073-1 )

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ALPHA ( 1 ) = -4.086 BETA ( 4 ) = 4.270

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (XE8817)

## SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1540  | .1860  | .1770  | .2040   | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|-------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |         |        |        |        |       |       |
| 180.000 | 1.0393 | .6976  | .4843  | .3841  | .3116  | .3214  |        | .4902  |        | -1.1212 | -.1939 | -.0948 | -.0319 | .0000 |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460  |        |        |        |       |       |
| PHI     |        |        |        |        |        |        |        |        |        |         |        |        |        |       |       |
| .000    | -.1193 | -.1458 | -.1858 | -.2515 | -.2312 | -.2656 | -.2500 |        | -.1229 | -.1767  |        |        |        |       |       |
| 40.000  | -.1415 | -.1780 | -.2335 | -.2308 | -.2003 | -.2119 |        |        | -.1259 | -.1629  |        |        |        |       |       |
| 70.000  | -.0419 | -.0880 | -.0386 | -.0349 | -.1018 | -.0877 | -.1160 |        |        |         |        |        |        |       |       |
| 90.000  | -.0142 | -.0364 | .0033  | .0345  | -.1695 | -.1567 | -.1682 |        |        |         |        |        |        |       |       |
| 105.000 |        |        | .0377  | .0358  | -.3090 | -.2198 | -.2208 |        |        |         |        |        |        |       |       |
| 110.000 |        |        |        |        |        |        |        | -.3050 |        |         |        |        |        |       |       |
| 120.000 | -.0167 | -.0130 | .0598  | .0834  | -.4555 | -.3579 | -.3184 |        |        |         |        |        |        |       |       |
| 135.000 |        |        | .1695  | .3103  | -.3628 | -.2595 | -.2577 |        |        |         |        |        |        |       |       |
| 150.000 | .0221  | .0635  | .2055  | .4809  | -.2561 | -.2721 | -.2410 |        |        |         |        |        |        |       |       |
| 165.000 | .0265  | .2096  |        |        | -.1538 | -.2639 | -.2048 |        |        |         |        |        |        |       |       |
| 180.000 | .0262  | .0963  | .2405  | .4632  |        |        |        |        |        |         |        |        |        |       |       |

ALPHA ( 1 ) = -4.101 BETA ( 5 ) = 8.352 MACH = .59694 O = 595.28 P = 2386.4 RN/L = 4.8216

## SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1530  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| .000    | .9886  | .1220  | -.2169 | -.2038 | -.2392 |        |        | -.1830 |        | -.1656 | -.1344 | -.1044 | -.0773 | -.0676 | -.0887 |
| 20.000  |        |        | -.2138 | -.2011 | -.2425 | -.2116 |        | -.1825 |        | -.1576 |        |        |        |        |        |
| 40.000  |        |        | -.1321 | -.2225 | -.2394 | -.2023 |        | -.1989 |        | -.1770 | -.1176 | -.0635 | -.0419 | -.0478 | -.0443 |
| 55.000  |        |        | -.0608 | -.1797 | -.2049 | -.2148 |        | -.2504 |        | -.2558 |        |        |        |        |        |
| 70.000  |        |        | -.0132 | -.1621 | -.1989 | .1953  |        | -.2680 |        | -.3245 | -.2599 | -.0987 | -.0195 | .0297  |        |
| 90.000  | .0969  | .0415  | -.1516 | -.2166 | -.2357 |        |        | -.3526 |        | -.4958 | -.3207 | -.1367 | -.0369 | .0103  |        |
| 120.000 |        | .1521  | -.0071 | -.1233 | -.1112 |        |        | -.3476 |        | -.5429 | -.4002 | -.3543 | -.1279 | -.0677 |        |
| 140.000 |        |        |        |        |        |        |        | -.5198 |        | -.5198 |        |        |        |        |        |
| 150.000 | .2909  | .2137  | .1093  | .0997  |        |        |        | -.1418 |        | -.6353 | -.2736 | -.1548 | -.1077 | -.0711 |        |
| 151.000 |        |        |        |        |        |        |        |        | -.2959 |        |        |        |        |        |        |
| 162.000 |        |        |        |        |        |        |        |        | -.1739 |        |        |        |        |        |        |
| 165.000 |        |        |        |        |        |        |        |        |        | -.9887 | -.2407 | -.1519 | -.0825 | -.0574 |        |
| 169.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 174.000 | .9886  | .6284  | .4366  | .3268  | .2609  | .2746  | .5416  |        |        |        |        |        |        |        |        |
| 180.000 | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |        |
| X/LB    |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| .000    | -.1241 | -.1492 | -.1927 | -.2551 | -.2399 | -.2733 | -.2565 |        | -.1280 | -.1872 |        |        |        |        |        |
| 40.000  | -.1279 | -.1732 | -.2278 | -.2341 | -.2089 | -.2035 |        |        | -.1283 | -.1760 |        |        |        |        |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB817)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 1 ) = -.4.101 BETA ( 5 ) = 8.352

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

70.000 -.0621 -.1216 -.0830 .0008 -.1416 -.1099 -.1316  
 90.000 -.0384 -.0790 -.0575 -.0228 -.2147 -.1858 -.1868  
 105.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
 110.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
 120.000 -.0542 -.0784 -.0340 -.1269 -.5957 -.4502 -.3851  
 135.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
 150.000 -.0374 -.0125 .0970 .4271 -.4623 -.5941 -.3031  
 165.000 -.0353 .1149 .1149 .1149 .1149 .1149 .1149  
 180.000 -.0281 .0345 .1737 .3515

ALPHA ( 2 ) = .084 BETA ( 1 ) = -7.892 MACH = .5942 Q = .594.20 P = .2388.3 RV/L = 4.8159

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

20.000 1.0334 .3200 -.0650 -.1146 -.1422 -.1719 -.2004  
 40.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
 55.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
 70.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
 90.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
 120.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
 140.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
 150.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
 165.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
 174.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
 180.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000

X/LB

PHI

40.000 -.0648 -.0936 -.1448 -.2097 -.2062 -.2550 -.2450  
 70.000 -.1192 -.1439 -.1439 -.2106 -.2051 -.1942 -.2231  
 90.000 -.0860 -.0754 .0344 .1729 .0343 .0215 -.0589  
 105.000 -.0435 -.0257 .0888 .2169 .0049 .0418 .1112  
 110.000 .1339 .3440 .3440 .3440 .3440 .3440 .3440  
 120.000 .0789 -.0010 .1947 .4873 .1576 .1256 .1407  
 135.000 .2366 .2366 .2366 .2366 .2366 .2366 .2366  
 150.000 -.0437 .0320 .2251 .2470 .1569 .0844 .1450

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 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8817)

| ALPHA ( 2 ) = .084 BETA ( 1 ) = -7.892   |        | DEPENDENT VARIABLE CP |        | Q = 594.20 P = 2386.3 RN/L = 4.8159 |         |
|--|--------|-----------------------|--------|-------------------------------------|---------|
| SECTION ( 1 ) ORBITER FUSELAGE   |        | DEPENDENT VARIABLE CP |        |                                     |         |
| X/LB   |        |                       |        |                                     |         |
| PHI  |        |                       |        |                                     |         |
| 165.000  | -.0456 | .1798                 | .1189  | -.0385                              | -.2063  |
| 180.000  | -.0561 | .1398                 | .2749  |                                     |         |
| ALPHA ( 2 ) = .094 BETA ( 2 ) = -3.858 MACH = .59642 Q = 594.20 P = 2386.3 RN/L = 4.8159 |        | DEPENDENT VARIABLE CP |        |                                     |         |
| SECTION ( 1 ) ORBITER FUSELAGE   |        | DEPENDENT VARIABLE CP |        |                                     |         |
| X/LB   |        |                       |        |                                     |         |
| PHI  |        |                       |        |                                     |         |
| 1.0729   | .3618  | -.0242                | -.0837 | -.1199                              | -.1108  |
| 20.000   |        | -.0032                | -.0795 | -.1421                              | -.1288  |
| 40.000   |        | .1786                 | -.0407 | -.1101                              | -.1710  |
| 55.000   |        | .3167                 | .1231  | .0453                               | -.1399  |
| 70.000   |        | .3891                 | .1897  | .1087                               | -.1696  |
| 90.000   | .5982  | .4403                 | .2386  | .1374                               | -.2474  |
| 120.000  |        | .4696                 | .3163  | .2187                               | -.2697  |
| 140.000  |        | .4257                 | .3092  | .2357                               | -.3407  |
| 150.000  |        |                       |        | .4638                               | -.5165  |
| 167.000  |        |                       |        | .1058                               | -.3525  |
| 155.000  |        |                       |        | .1179                               | -.1406  |
| 169.000  |        |                       |        |                                     | -.0627  |
| 174.000  |        |                       |        |                                     | -.07301 |
| 180.000  |        |                       |        |                                     |         |
| SECTION ( 2 ) ORBITER FUSELAGE   |        | DEPENDENT VARIABLE CP |        |                                     |         |
| X/LB   |        |                       |        |                                     |         |
| PHI  |        |                       |        |                                     |         |
| 1.0729   | .5965  | .3561                 | .2789  | .2182                               | .2390   |
| 6520   | .7290  | .7790                 | .8210  | .8790                               | .9210   |
| PHI  |        |                       |        |                                     |         |
| -.0565   | -.0964 | -.1454                | -.2064 | -.2087                              | -.2482  |
| -.1012   | -.1431 | -.1991                | -.2080 | -.2080                              | -.2278  |
| -.1188   | -.1158 | -.0141                | .1212  | -.0140                              | -.0783  |
| -.0712   | -.0577 | .0516                 | .1496  | -.0687                              | -.1271  |
| 105.000  |        | .1056                 | .2399  | -.1587                              | -.1808  |
| 110.000  |        | .1981                 | .3573  | -.2301                              | -.1798  |
| 120.000  | .0208  | .2480                 | .3829  | -.2029                              | -.1394  |
| 135.000  |        | .2530                 | .3145  | -.1793                              | -.1648  |
| 150.000  | .0622  | .2212                 | .0213  | -.1222                              | -.1995  |
| 165.000  | .0042  | .2024                 | .3658  |                                     |         |
| 180.000  | .0083  | .2024                 |        |                                     |         |

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## TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB17)

ALPHA ( 2 ) = .071 BETA ( 3 ) = .198 MACH = .59642 Q = 594.20 P = 2386.3 RN/L = 4.8159

## SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | PHI    | .0000 | .0080  | .0230  | .0460  | .0700  | .1120 | .1580 | .1660  | .1770  | .2040    | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|--------|--------|--------|--------|-------|-------|--------|--------|----------|--------|--------|--------|--------|--------|
| PHI     |        |       |        |        |        |        |       |       |        |        |          |        |        |        |        |        |
| .000    | 1.0815 | .3662 | -.0242 | -.0760 | -.1157 | -.1447 |       |       | -.1157 |        | -.1020   | -.0814 | -.0482 | -.0280 | -.0045 | -.0210 |
| 20.000  |        |       | -.0046 | -.0731 | -.1371 | -.1447 |       |       | -.1266 |        | -.1155   |        |        |        |        |        |
| 40.000  |        |       | .1192  | -.0595 | -.1121 | -.1254 |       |       | -.1579 |        | -.1448   |        | -.0418 | -.0299 | -.0233 | -.0139 |
| 55.000  |        |       | .2240  | .0460  | -.0177 | -.0765 |       |       | -.1318 |        | -.1763   |        |        |        |        |        |
| 70.000  |        |       | .2699  | .0807  | -.0072 | -.0272 |       |       | -.1465 |        | -.2250   |        | -.0912 | -.0252 | .0050  |        |
| 90.000  |        | .4466 | .3151  | .1197  | .0341  | -.0153 |       |       | -.1505 |        | -.3256   |        | -.1164 | -.0389 | .0023  |        |
| 120.000 |        |       | .3749  | .2226  | .1221  | .1254  |       |       | -.0317 |        | -.3542   |        | -.2367 | -.0446 | -.0106 |        |
| 140.000 |        |       |        |        |        |        |       |       |        |        | -.4079   |        |        |        |        |        |
| 150.000 |        |       | .3865  | .2814  | .1953  | .2144  |       |       | .3686  |        | -.5610   |        | -.1273 | -.0477 | -.0143 |        |
| 162.000 |        |       |        |        |        |        |       |       | -.0134 |        |          |        |        |        |        |        |
| 165.000 |        |       |        |        |        |        |       |       | .0272  |        |          |        |        |        |        |        |
| 169.000 |        |       |        |        |        |        |       |       |        |        | -.1.0764 |        | -.1231 | -.0468 | -.0091 |        |
| 174.000 |        |       |        |        |        |        |       |       | .4642  |        |          |        |        |        |        |        |
| 180.000 | 1.0815 | .5907 | .3756  | .2985  | .2293  | .2521  | .6248 |       | .4450  |        | -.1.2979 |        | -.1119 | -.0444 | -.0136 |        |
| X/LB    | .6520  | .7290 | .7790  | .8210  | .8790  | .9210  | .9600 | .9990 | 1.0180 | 1.0460 |          |        |        |        |        |        |

PHI

|         |        |        |        |        |        |        |        |
|---------|--------|--------|--------|--------|--------|--------|--------|
| .000    | -.0542 | -.0891 | -.1380 | -.2115 | -.2090 | -.2529 | -.2470 |
| 40.000  | -.0762 | -.1344 | -.1988 | -.2064 | -.2064 | -.1887 | -.2251 |
| 70.000  | -.1332 | -.1454 | -.0478 | .0651  | -.0710 | -.0613 | -.1024 |
| 90.000  | -.0833 | -.0794 | .0171  | .0792  | -.1367 | -.1215 | -.1506 |
| 105.000 |        |        | .0755  | .1060  | -.2372 | -.1802 | -.2025 |
| 110.000 |        |        |        |        |        |        |        |
| 120.000 | -.0338 | .0083  | .1492  | .1698  | -.3160 | -.2490 | -.2308 |
| 135.000 |        |        | .2125  | .3596  | -.2737 | -.1969 | -.2195 |
| 150.000 | .0115  | .0687  | .2254  | .4170  | -.2331 | -.2049 | -.1995 |
| 165.000 | .0080  |        | .2133  |        | -.0849 | -.2034 | -.1882 |
| 180.000 | .0042  | .0805  | .2229  | .4376  |        |        |        |

ALPHA ( 2 ) = .068 BETA ( 4 ) = 4.249 MACH = .59642 Q = 594.20 P = 2386.3 RN/L = 4.9159

## SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | PHI    | .0000 | .0050  | .0230  | .0460  | .0700  | .1120 | .1580 | .1660  | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|--------|--------|--------|--------|-------|-------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |        |        |        |        |       |       |        |       |        |        |        |        |        |        |
| .000    | 1.0595 | .3384 | -.0537 | -.0834 | -.13.6 |        |       |       | -.1296 |       | -.1133 | -.0898 | -.0644 | -.0337 | -.0142 | -.0235 |
| 20.000  |        |       | -.0431 | -.0912 | -.1485 | -.1489 |       |       | -.1365 |       | -.1204 |        |        |        |        |        |
| 40.000  |        |       | .0433  | .0964  | .1384  | .1343  |       |       | -.1520 |       | -.1434 |        | -.0444 | -.0227 | -.0194 | .0012  |
| 55.000  |        |       | .1105  | .0398  | -.0866 | -.1298 |       |       | -.1731 |       | -.2088 |        |        |        |        |        |
| 70.000  |        |       | .1506  | -.0210 | -.0564 | -.1008 |       |       | -.2118 |       | -.2671 |        | -.1046 | -.0394 | -.0064 |        |
| 90.000  |        | .2748 | .1853  | -.0009 | -.0709 | -.1113 |       |       | -.2341 |       | -.2671 |        | -.2903 | -.0480 | -.0055 |        |
| 120.000 |        |       | .2572  | .1127  | .0172  | .0276  |       |       | -.1594 |       | -.4398 |        | -.3382 | -.2588 | -.0575 | -.0233 |



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TABULATED PRESSURE DATA - 0A148 ( APES 11-073-1 )

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(XEB817)

ALPHA ( 2 ) = .061 BETA ( 5 ) = 8.308

APES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | PHI | 0.000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|-------|
| 180.000 | PHI | 1.0086 | .4872  | .3185  | .2172  | .1634  | .1951  |        | .3192  |        | -1.3044 | -.2735 | -.1861 | -.1014 | -.0751 |       |
| X/LB    | PHI | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460  |        |        |        |        |       |
| PHI     |     |        |        |        |        |        |        |        |        |        |         |        |        |        |        |       |
| 300.000 |     | -.0663 | -.0950 | -.1432 | -.2219 | -.2113 | -.2583 | -.2469 |        | -.1200 | -.1751  |        |        |        |        |       |
| 40.000  |     | -.0573 |        | -.1280 | -.1947 | -.2169 | -.1981 | -.1892 |        | -.1193 | -.1649  |        |        |        |        |       |
| 70.000  |     | -.1486 | -.1887 | -.1232 | -.0265 | -.1516 | -.1170 | -.1371 |        |        |         |        |        |        |        |       |
| 90.000  |     | -.1033 | -.1280 | -.0727 | -.0337 | -.2290 | -.2018 | -.1020 |        |        |         |        |        |        |        |       |
| 100.000 |     |        | -.0313 | -.0365 | -.3521 | -.2552 | -.2451 |        |        |        |         |        |        |        |        |       |
| 110.000 |     |        |        |        |        |        |        |        | -.3183 |        |         |        |        |        |        |       |
| 120.000 |     | -.0759 | -.0831 | -.0164 | -.1324 | -.5673 | -.4177 | -.3472 | -.2725 |        |         |        |        |        |        |       |
| 135.000 |     |        |        | .0630  | .1185  | -.5118 | -.3566 | -.3128 |        |        |         |        |        |        |        |       |
| 150.000 |     | -.0537 | -.0264 | .0908  | .3652  | -.4910 | -.4039 | -.3080 |        |        |         |        |        |        |        |       |
| 165.000 |     | -.0580 |        | .0998  | -.3500 | -.3904 | -.2109 |        |        |        |         |        |        |        |        |       |
| 180.000 |     | -.0676 | -.0017 | .1418  | .2975  |        |        |        |        |        |         |        |        |        |        |       |

PHA ( 3 ) = 4.005 BETA ( 1 ) = -7.903 MACH = .59616 O = 593.73 P = 2386.3 RV/L = 4.8137

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | PHI | 0.000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|-------|
| 180.000 | PHI | 1.0344 | .4844  | .0773  | -.0106 | -.0580 |        |        | -.0952 |        | -.0809  | -.0705 | -.0464 | -.0170 | .0192  | .0219 |
| 20.000  |     |        |        | .1425  | .0187  | -.0642 | -.1128 |        | -.1066 |        | -.0949  | -.1038 | -.0568 | -.0101 | .0023  | .0291 |
| 40.000  |     |        |        | .3426  | .1038  | .0154  | -.0301 |        | -.1028 |        | -.1038  | -.0568 | -.0101 | .0023  | .0063  | .0291 |
| 55.000  |     |        |        | .4901  | .2854  | .1941  | .1049  |        | .0218  |        | -.0482  | -.0482 |        |        |        |       |
| 70.000  |     |        |        | .5241  | .3213  | .2232  | .1472  |        | .0199  |        | -.0833  | -.1418 | -.0463 | -.0113 | .0020  |       |
| 90.000  |     | .6970  |        | .5224  | .3328  | .2305  | .1667  |        | .0302  |        | -.1485  | -.1707 | -.0856 | -.0299 | -.0125 |       |
| 120.000 |     |        |        | .4600  | .3089  | .2089  | .2131  |        | .1396  |        | -.2193  | -.2793 | -.3026 | -.1709 | -.1691 |       |
| 140.000 |     |        |        | .3278  | .2055  | .1426  | .1824  |        | .4853  |        | -.5707  | -.4804 | -.2071 | -.1261 | -.1074 |       |
| 150.000 |     |        |        |        |        |        |        |        |        | .1239  |         |        |        |        |        |       |
| 162.000 |     |        |        |        |        |        |        |        |        | .0873  |         |        |        |        |        |       |
| 165.000 |     |        |        |        |        |        |        |        |        |        | -.12747 | -.3458 | -.1988 | -.1192 | -.0351 |       |
| 174.000 |     |        |        |        |        |        |        |        |        |        |         |        |        |        |        |       |
| 180.000 |     |        |        |        |        |        |        |        |        |        |         |        |        |        |        |       |
| X/LB    | PHI | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460  |        |        |        |        |       |
| PHI     |     |        |        |        |        |        |        |        |        |        |         |        |        |        |        |       |
| 300.000 |     | -.0033 | -.0389 | -.0946 | -.1724 | -.1942 | -.2413 | -.2391 |        | -.1150 | -.1718  |        |        |        |        |       |
| 40.000  |     | -.0214 | -.0851 | -.1643 | -.1883 | -.1675 | -.2194 |        |        | -.1102 | -.1369  |        |        |        |        |       |

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 AMES 11-073(0A148) -140A/B/C/R OR3 FUSELAGE (XEB817)

ALPHA ( 3 ) = 4.005 BETA ( 1 ) = -7.903

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |       |        |        |        |        |        |        |
| 70.000  | -.1539 | -.1458 | -.0069 | .1700 | .0420  | .0339  | -.0506 |        |        |        |
| 90.000  | -.1398 | -.0889 | .0490  | .2192 | .0055  | -.0362 | -.1102 |        |        |        |
| 105.000 |        |        | .0938  | .3673 | -.0660 | -.0809 | -.1546 |        |        |        |
| 110.000 |        |        |        |       |        |        |        | -.2680 |        |        |
| 120.000 | -.1948 | -.0824 | .1354  | .5164 | -.1881 | -.1379 | -.1461 | -.2163 |        |        |
| 135.000 |        |        | .1893  | .3602 | -.2006 | -.1340 | -.1881 |        |        |        |
| 150.000 | -.1024 | -.0137 | .1846  | .1288 | -.2221 | -.1157 | -.1575 |        |        |        |
| 165.000 | -.0913 | .1482  |        | .0932 | -.0584 | -.2080 |        |        |        |        |
| 180.000 | -.0843 | -.0128 | .1189  | .2282 |        |        |        |        |        |        |

ALPHA ( 3 ) = 4.010 BETA ( 2 ) = -3.865 MACH = .59616 Q = 593.73 P = 2386.3 RN/L = 4.8137

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770   | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|---------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |        |        |       |        |         |        |        |        |        |        |       |
| 20.000  | 1.0645 | .5283 | .1207 | .0208 | -.0295 | -.0797 |       | -.0747 | -.0858  | -.0565 | -.0273 | -.0027 | .0278  | .0328  |       |
| 40.000  |        |       | .1558 | .0452 | -.0406 | -.0266 |       | -.0783 | -.0741  | -.0883 | -.0470 | .0008  | .0118  | .0142  | .0473 |
| 55.000  |        |       | .3943 | .2132 | .1283  | .0430  |       | -.0349 | -.1021  | -.1956 | -.0841 | -.0435 | -.0261 |        |       |
| 70.000  |        |       | .4111 | .2218 | .1299  | .0753  |       | -.0538 | -.1515  | -.2229 | -.1160 | -.0550 | -.0278 |        |       |
| 90.000  | .5645  |       | .4187 | .2337 | .1399  | .0915  |       | -.0444 | -.2379  | -.3062 | -.2780 | -.1251 | -.1026 |        |       |
| 120.000 |        |       | .3889 | .2470 | .1556  | .1731  |       | .0701  | -.4011  | -.4187 | -.1730 | -.0893 | -.0645 |        |       |
| 140.000 |        |       | .3120 | .2068 | .1338  | .1748  |       | .4206  | -.6031  | .0504  |        |        |        |        |       |
| 150.000 |        |       |       |       |        |        |       |        | .0430   |        |        |        |        |        |       |
| 162.000 |        |       |       |       |        |        |       |        |         | -.1242 | -.3086 | -.1632 | -.0817 | -.0531 |       |
| 163.000 |        |       |       |       |        |        |       |        |         |        |        |        |        |        |       |
| 174.000 | 1.0645 | .4457 | .2329 | .1802 | .1235  | .1622  |       | .4422  | -.14726 | -.2690 | -.1446 | -.0719 | -.0483 |        |       |
| 180.000 | .6520  | .7290 | .7790 | .8210 | .8790  | .9210  | .9600 | .9990  | 1.0180  | 1.0460 |        |        |        |        |       |

|         |        |        |        |        |        |        |        |  |  |  |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--|--|--|--|--|--|--|--|
| PHI     |        |        |        |        |        |        |        |  |  |  |  |  |  |  |  |
| 40.000  | .0031  | -.0393 | -.0964 | -.1733 | -.1795 | -.2337 | -.2336 |  |  |  |  |  |  |  |  |
| 70.000  | -.0038 | -.0847 | -.1583 | -.1583 | -.1660 | -.1648 | -.2226 |  |  |  |  |  |  |  |  |
| 90.000  | -.2316 | -.1818 | -.0759 | .1149  | -.0098 | .0048  | -.0635 |  |  |  |  |  |  |  |  |
| 105.000 | -.1626 | -.1245 | .0159  | .1508  | -.0647 | -.0806 | -.1295 |  |  |  |  |  |  |  |  |
| 110.000 |        |        | .0695  | .2496  | -.1403 | -.1259 | -.1757 |  |  |  |  |  |  |  |  |
| 120.000 | -.1329 | -.0400 | .1697  | .3420  | -.2446 | -.1821 | -.1780 |  |  |  |  |  |  |  |  |
| 135.000 |        |        | .2148  | .3086  | -.2367 | -.1630 | -.1970 |  |  |  |  |  |  |  |  |
| 150.000 | -.0569 | .0276  | .2210  | .2181  | -.2319 | -.1621 | -.1742 |  |  |  |  |  |  |  |  |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -14CA/B/C/R ORB FUSELAGE

XREF -

ALPHA ( 3 ) = 4.010 BETA ( 2 ) = -3.866

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PM:

155.000 -.0431 .1888  
160.000 -.0391 .0445 .1788 .3033  
- .0090 -.1354 -.1945

ALPHA ( 3 ) = 4.008 BETA ( 3 ) = .197 MACH = .59616 Q = 593.73 P = 2385.2 R/W/L = 4.8137

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0000 .0000 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3760 .4970 .5740

PM:

1.0740 .5316 .1146 .0346 -.0284 -.0760  
20.000 .1309 .0432 -.0432 -.0772  
40.000 .2396 .0629 -.0123 -.0746  
55.000 .2978 .1167 -.0238 -.0959  
70.000 .2570 .1191 .0413 -.1194  
85.000 .3075 .1290 .0465 .0042  
100.000 .3572 .1703 .0445 .1157  
120.000 .2621 .2002 .1162 .1514  
140.000 .3287  
160.000 -.0546  
180.000 -.0390  
200.000 .4089  
220.000 .5689  
240.000 .3790  
260.000 .3790  
280.000 .9930  
300.000 1.0180 1.0460  
320.000 -.0632  
340.000 -.0734  
360.000 -.0923  
380.000 -.1439  
400.000 -.2028  
420.000 -.2941  
440.000 -.3665  
460.000 -.4620  
480.000 -.6348  
500.000 -.0546  
520.000 -.0390  
540.000 -1.1993  
560.000 -.2747  
580.000 -1.4266  
600.000 -.2520  
620.000 -1.1305  
640.000 -.1305  
660.000 -.0329  
680.000 -.0329  
700.000 -.0329  
720.000 -.0329  
740.000 -.0329  
760.000 -.0329  
780.000 -.0329  
800.000 -.0329  
820.000 -.0329  
840.000 -.0329  
860.000 -.0329  
880.000 -.0329  
900.000 -.0329  
920.000 -.0329  
940.000 -.0329  
960.000 -.0329  
980.000 -.0329  
1000.000 -.0329

X/LB

PM:

1.0740 .5316 .1146 .0346 -.0284 -.0760  
20.000 .1309 .0432 -.0432 -.0772  
40.000 .2396 .0629 -.0123 -.0746  
55.000 .2978 .1167 -.0238 -.0959  
70.000 .2570 .1191 .0413 -.1194  
85.000 .3075 .1290 .0465 .0042  
100.000 .3572 .1703 .0445 .1157  
120.000 .2621 .2002 .1162 .1514  
140.000 .3287  
160.000 -.0546  
180.000 -.0390  
200.000 .4089  
220.000 .5689  
240.000 .3790  
260.000 .3790  
280.000 .9930  
300.000 1.0180 1.0460  
320.000 -.0632  
340.000 -.0734  
360.000 -.0923  
380.000 -.1439  
400.000 -.2028  
420.000 -.2941  
440.000 -.3665  
460.000 -.4620  
480.000 -.6348  
500.000 -.0546  
520.000 -.0390  
540.000 -1.1993  
560.000 -.2747  
580.000 -1.4266  
600.000 -.2520  
620.000 -1.1305  
640.000 -.1305  
660.000 -.0329  
680.000 -.0329  
700.000 -.0329  
720.000 -.0329  
740.000 -.0329  
760.000 -.0329  
780.000 -.0329  
800.000 -.0329  
820.000 -.0329  
840.000 -.0329  
860.000 -.0329  
880.000 -.0329  
900.000 -.0329  
920.000 -.0329  
940.000 -.0329  
960.000 -.0329  
980.000 -.0329  
1000.000 -.0329

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/L/C/R ORB FUSELAGE

(XEB817)

ALPHA ( 3 ) = 4.011 BETA ( 4 ) = 4.242 MACH = .59616 Q = 593.73 P = 2386.3 RV/L = 4.8137

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770  | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|--------|---------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |        |        |       |        |        |         |        |        |        |        |       |
| .000    | 1.0531 | .5093 | .1050 | .0259 | -.0406 |        |       | -.0757 |        | -.0678  | -.0539 | -.0263 | -.0022 | .0332  | .0267 |
| 20.000  |        |       | .1034 | .0142 | -.0539 | -.0237 |       | -.0887 |        | -.0875  | -.1146 | -.0281 | -.0049 | .0092  | .0507 |
| 40.000  |        |       | .1514 | .0168 | -.0439 | -.0694 |       | -.0930 |        | -.2008  |        |        |        |        |       |
| 55.000  |        |       | .1659 | .0192 | -.0351 | -.0797 |       | -.1489 |        | -.2015  | -.2601 | -.1394 | -.0796 | -.0494 |       |
| 70.000  |        |       | .1657 | .0135 | -.0520 | -.0726 |       | -.1809 |        | -.3720  | -.2941 | -.1485 | -.0730 | -.0416 |       |
| 90.000  |        | .2476 | .1896 | .0154 | -.0468 | -.0738 |       | -.1971 |        | -.4479  | -.3396 | -.2504 | -.0632 | -.0431 |       |
| 120.000 |        |       | .2142 | .0818 | -.0023 | .0353  |       | -.1270 |        | -.5294  |        |        |        |        |       |
| 140.000 |        |       |       |       |        |        |       |        |        | -.6902  | -.3246 | -.1456 | -.0625 | -.0384 |       |
| 150.000 |        |       | .2225 | .1487 | .0768  | .0995  |       | .2268  |        |         |        |        |        |        |       |
| 151.000 |        |       |       |       |        |        |       | -.1740 |        |         |        |        |        |        |       |
| 162.000 |        |       |       |       |        |        |       | -.1524 |        | -1.2005 | -.2698 | -.1458 | -.0680 | -.0415 |       |
| 165.000 |        |       |       |       |        |        |       | .3509  |        |         |        |        |        |        |       |
| 169.000 |        |       |       |       |        |        |       | .5096  |        |         |        |        |        |        |       |
| 174.000 |        |       |       |       |        |        |       | .3554  |        | -1.4180 | -.2692 | -.1470 | -.0701 | -.0479 |       |
| 180.000 | 1.0531 | .4139 | .2471 | .1708 | .1201  | .1641  |       |        |        |         |        |        |        |        |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790  | .9210  | .9600 | .9990  | 1.0180 | 1.0460  |        |        |        |        |       |

PHI

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|
| .000    |        |        |        |        |        |        |        |        |       |       |       |       |       |       |       |
| 20.000  |        |        | .0906  | -.1737 | -.1793 | -.2434 | -.2315 |        |       |       |       |       |       |       |       |
| 40.000  |        |        | -.0794 | -.1521 | -.1934 | -.1754 | -.1842 |        |       |       |       |       |       |       |       |
| 70.000  |        |        | -.1249 | -.0026 | -.1153 | -.0961 | -.1263 |        |       |       |       |       |       |       |       |
| 90.000  |        |        | -.0504 | -.0050 | -.1950 | -.1620 | -.1718 |        |       |       |       |       |       |       |       |
| 105.000 |        |        | -.0047 | .0116  | -.2953 | -.2156 | -.2206 |        |       |       |       |       |       |       |       |
| 110.000 |        |        |        |        |        |        |        | -.3033 |       |       |       |       |       |       |       |
| 120.000 |        |        | .0464  | .0646  | -.4119 | -.3032 | -.2643 | -.2350 |       |       |       |       |       |       |       |
| 135.000 |        |        | .1351  | .2886  | -.3893 | -.2687 | -.2526 |        |       |       |       |       |       |       |       |
| 150.000 |        |        | .1602  | .2645  | -.3595 | -.2964 | -.2441 |        |       |       |       |       |       |       |       |
| 165.000 |        |        | .1646  | -.2249 | -.2930 | -.2930 | -.1937 |        |       |       |       |       |       |       |       |
| 180.000 | -.0925 | -.0648 |        |        |        |        |        |        |       |       |       |       |       |       |       |

ALPHA ( 3 ) = 4.014 BETA ( 5 ) = 8.290 MACH = .59616 Q = 593.73 P = 2386.3 RV/L = 4.8137

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460  | .0700  | .1120  | .1580 | .1660  | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|--------|--------|--------|-------|--------|-------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |        |        |        |       |        |       |        |        |        |        |        |       |
| .000    | 1.0010 | .4781 | .0876 | .0079  | -.0588 |        |       | -.0964 |       | -.0897 | -.0688 | -.0407 | -.0138 | .0151  | .0088 |
| 20.000  |        |       | .0561 | -.0144 | -.0831 | -.1010 |       | -.1114 |       | -.1165 | -.1582 | -.0743 | -.0338 | -.0121 | .0426 |
| 40.000  |        |       | .0599 | -.0516 | -.0986 | -.1120 |       | -.1316 |       | -.2441 | -.1300 | -.0743 | -.0338 | -.0121 | .0426 |
| 55.000  |        |       | .0487 | -.0755 | -.1136 | -.1492 |       | -.2027 |       | -.2441 | -.2752 | -.1498 | -.0846 | -.0503 |       |
| 70.000  |        |       | .0459 | -.0848 | -.1320 | -.1330 |       | -.2262 |       | -.2989 | -.2752 | -.1498 | -.0846 | -.0503 |       |
| 90.000  |        | .0582 | .0691 | -.0876 | -.1375 | -.1444 |       | -.2533 |       | -.4150 | -.2989 | -.1542 | -.0670 | -.0399 |       |
| 120.000 |        |       | .1021 | -.0190 | -.0981 | -.0629 |       | -.2433 |       | -.5144 | -.3670 | -.2515 | -.0577 | -.0409 |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

(XFB17)

|               |       |              |       |
|---------------|-------|--------------|-------|
| ALPHA ( 3 ) = | 4.014 | BETA ( 5 ) = | 8.290 |
|---------------|-------|--------------|-------|

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

|         |        |       |       |       |       |       |       |       |         |        |        |        |        |       |       |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|---------|--------|--------|--------|--------|-------|-------|
| X/LB    | .0000  | .0090 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770   | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
| PHI     |        |       |       |       |       |       |       |       |         |        |        |        |        |       |       |
| 140.000 |        |       |       |       |       |       |       |       |         |        |        |        |        |       |       |
| 150.000 |        |       |       |       |       |       |       |       |         |        |        |        |        |       |       |
| 151.000 |        |       |       |       |       |       |       |       |         |        |        |        |        |       |       |
| 162.000 |        |       |       |       |       |       |       |       |         |        |        |        |        |       |       |
| 165.000 |        |       |       |       |       |       |       |       |         |        |        |        |        |       |       |
| 169.000 |        |       |       |       |       |       |       |       |         |        |        |        |        |       |       |
| 174.000 |        |       |       |       |       |       |       |       |         |        |        |        |        |       |       |
| 180.000 | 1.0010 | .3469 | .2070 | .1167 | .0800 | .1221 | .4428 | .2761 | -1.2120 | -.2383 | -.1556 | -.0977 | -.0786 |       |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9500 | .9990 | 1.0180  | 1.0480 |        |        |        |       |       |

$$\text{ALPHA} (4) = 7.901 \quad \text{BETA} (1) =$$

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

[illegible]

**REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR**

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB817)

ALPHA ( 4 ) = 7.901 BETA ( 1 ) = -7.891

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4870 .5740

PHI

180.000 .9935 .2791 .0844 .0462 .0031 .0657 .1703 -1.7023 -.3132 -.1801 -.1168 -.1057

X/LB

.6520 .7250 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .0671 .0183 -.0420 -.1246 -.1496 -.2115 -.2204  
40.000 .0832 -.0185 -.1005 -.1509 -.1250 -.2023  
70.000 -.2999 -.2041 -.0366 .1691 .0502 .0438 -.0364  
90.000 -.2372 -.1485 .0228 .2225 .0206 -.0277 -.0994  
105.000 .0525 .3860 -.0415 -.0643 -.1510

110.000

-.2599

120.000

-.2275

135.000

-.3336 -.1671 .0690 .5391 -.2180 -.1537 -.1519

150.000

.1403 .3273 -.1581 -.2060

155.000

-.1456 -.0539 .1538 -.0603 -.2828 -.1381 -.1697

165.000

-.1183 .1263 .0779 -.0656 -.2154

180.000

-.1072 -.0254 .1077 .1335

ALPHA ( 4 ) = 7.913 BETA ( 2 ) = -3.864 MACH = .59650 Q = 594.32 P = 2386.1 RAVL = 4.8187

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4870 .5740

PHI

.000 1.0246 .6731 .2606 .1344 .0655  
20.000 .3007 .1669 .0617 .0034  
40.000 .4219 .2200 .1288 .0712  
55.000 .4423 .2614 .1716 .0816  
70.000 .4099 .2388 .1364 .0859  
90.000 .5117 .3753 .2085 .1257 .0818  
120.000 .2983 .1624 .0779 .1115  
140.000 .1858 .1131 .0431 .1032

150.000

.3813

151.000

.0023

162.000

-.0277

165.000

.3868 -1.3984 -.3361 -.1775 -.0934 -.0775

169.000

.5437 .2666 -1.5956 -.2844 -.1523 -.0739 -.0694

174.000

1.0460

180.000

1.0246 .2886 .1066 .0800 .0360 .0954 .9990 1.0180 1.0460

PHI

.000 .0727 .0273 -.0345 -.1188 -.1407 -.2115 -.2142

40.000

.0843 -.0152 -.1005 -.1530 -.1266 -.1966

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEBB17)

AMES 11-073(0A148) - 140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 7.913 BETA ( 2 ) = -3.864

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI:

70.000 -3.433 -2.450 -.0908 .1172 .0048 .0088 -.0544  
 90.000 -.2521 -.1766 -.0152 .1544 -.0482 -.0695 -.1171  
 105.000 .0299 .0299 .0299 .2759 -.1225 -.1190 -.1728  
 110.000  
 120.000 -.2328 -.0859 .1583 .2060 -.2624 -.1861 -.1623  
 135.000 .2031 .1525 -.2617 -.1771 -.2020  
 150.000 -.0979 .0076 .1981 .1225 -.2562 -.1691 -.1742  
 165.000 -.0787 .1609 -.0421 -.1348 -.1836  
 180.000 -.0681 .0207 .1497 .2725

ALPHA ( 4 ) = 7.919 BETA ( 3 ) = .190 MACH = .59650 Q = 594.32 F = 2386.1 RN/L = 4.8187

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI:

1.0297 .6831 .2613 .1441 .0676 .0045 .0067  
 20.000 .2805 .1519 .0591 .0045 .0164 .0190 .0908 .0928  
 30.000 .3400 .0821 .0340 .0340 .0122 .0190 .0485 .0908 .0928  
 55.000 .3227 .1533 .0745 .0054 .0877 .1503 .0224 .0485 .0651 .1194  
 70.000 .2834 .1276 .0398 .0045 .1074 .2059 -.2492 -.1530 -.1043 -.0864  
 90.000 .2580 .1126 .0455 .0042 .1140 .2875 -.2688 -.1691 -.1026 -.0942  
 120.000 .2256 .0969 .0248 .0714 .1140 .3909 -.3552 -.3173 -.1484 -.1395  
 150.000 .1632 .0971 .0343 .0869 .3039 .5170 -.4049 -.1748 -.0786 -.0658  
 162.000  
 165.000  
 170.000  
 180.000

-1.057  
-1.3308  
-1.5209  
-1.748  
-1.9693  
-2.2766  
-2.766  
-3.492  
-3.117  
-3.990  
-4.060

X/LB .5520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI:

1.0297 .2803 .1264 .0819 .0488 .1061 .5161 .3492 .3117 .9990 1.0180 1.0460  
 70.000 .0784 .0363 -.0295 -.1202 -.1421 -.2094 -.2172  
 90.000 .3264 -.0096 -.0934 -.1615 -.1454 -.1801  
 105.000 .3585 -.2834 -.1185 .0515 -.0585 -.0512 -.0907  
 120.000 .2625 -.1932 -.0366 .0735 .1333 .1262 .1420  
 135.000 .0397 .1541 .1333 .1720 .2002  
 150.000  
 165.000  
 180.000

-2737  
-2059

1.133  
1.270  
1.478  
1.677  
1.889  
2.100  
2.346  
2.617  
2.915  
3.246  
3.617  
4.031  
4.488  
4.991

(XEB817)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 7.919 BETA ( 3 ) = .190

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI  
165.000 -.0556 .1415  
180.000 -.0582 .0187 .1569 .4223 -.1375 -.2287 -.1733

ALPHA ( 4 ) = 7.918 BETA ( 4 ) = 4.240 MACH = .59550 Q = 594.32 P = 2386.1 RN/L = 4.8187

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1680 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI  
.000 1.0123 .6613 .2512 .1386 .0591  
20.000 .2353 .1107 .0308 -.0150  
40.000 .2358 .0915 .0225 -.0160  
55.000 .1890 .0456 -.0243 -.0836  
70.000 .1594 .0213 -.0538 -.0670  
90.000 .1578 .0154 -.0452 -.0620  
120.000 .1478 .0330 -.0376 .0187  
140.000 .1261 .0693 -.0003 .0553  
150.000  
151.000  
162.000  
165.000  
169.000  
174.000  
180.000

-.0124  
-.0297  
-.0580  
-.1486  
-.1707  
-.1769  
-.1125  
-.2036  
-.2056  
-.2030  
-.2969  
-.2933  
-.2990  
-.0941  
-.0996  
-.1442  
-.2957  
-.2223  
-.2457  
-.2536  
-.3040  
-.2433  
-.1805

-.0154  
-.0440  
-.0943  
-.2077  
-.2545  
-.3473  
-.4484  
-.5628  
-.7437  
-1.2985  
-1.5114  
-1.0180  
-1.0460

-.0050  
-.0811  
-.2864  
-.2930  
-.3624  
-.3558  
-.2892  
-.2835  
-.1468  
-.0768  
-.0677

-.0136  
-.0155  
-.1202  
-.1107  
-.0961  
-.0829  
-.0663  
-.0543  
-.0704  
-.0768  
-.0677

-.0871  
-.1079  
-.1041  
-.0961  
-.0829  
-.0543  
-.0704  
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-.0768  
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-.1041  
-.0961  
-.0829  
-.0543  
-.0704  
-.0768  
-.0677

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## TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8817)

ALPHA ( 4 ) = 7.914 BETA ( 5 ) = 8.294 MACH = .59650 Q = 594.32 P = 2386.1 RN/L = 4.8187

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700  | .1120  | .1580  | .1660  | .1770   | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|-------|-------|-------|-------|--------|--------|--------|--------|---------|--------|--------|--------|--------|-------|-------|
| PHI     |       |       |       |       |        |        |        |        |         |        |        |        |        |       |       |
| 20.000  | .0000 | .9538 | .6280 | .2232 | .1138  | .0265  |        | -.0331 | -.0334  | -.0818 | -.0265 | -.0041 | .0332  | .0895 | .0765 |
| 40.000  |       |       |       | .1727 | .0694  | -.0164 | -.0421 | -.0735 |         |        |        |        |        |       |       |
| 55.000  |       |       |       | .1156 | .0148  | -.0595 | -.0899 | -.1308 |         |        |        |        |        |       |       |
| 70.000  |       |       |       | .0498 | -.0757 | -.1267 | -.1666 | -.2320 |         |        |        |        |        |       |       |
| 90.000  |       |       |       | .0251 | -.0315 | -.1465 | -.1289 | -.2694 |         |        |        |        |        |       |       |
| 120.000 |       | .0109 |       | .0353 | -.0867 | -.1281 | -.1315 | -.3020 |         |        |        |        |        |       |       |
| 140.000 |       |       |       | .0483 | -.0598 | -.1219 | -.0626 | -.2408 |         |        |        |        |        |       |       |
| 150.000 |       |       |       |       |        |        |        | -.2158 |         |        |        |        |        |       |       |
| 162.000 |       |       |       | .0483 | .0005  | -.0619 | -.0103 | .0703  |         |        |        |        |        |       |       |
| 165.000 |       |       |       |       |        |        |        | -.3442 |         |        |        |        |        |       |       |
| 169.000 |       |       |       |       |        |        |        | -.3344 |         |        |        |        |        |       |       |
| 174.000 |       |       |       |       |        |        |        |        |         |        |        |        |        |       |       |
| 180.000 |       |       |       |       |        |        |        |        |         |        |        |        |        |       |       |
| X/LB    | .9538 | .1789 | .0884 | .0243 | -.0162 | .0506  | .3859  | .2250  | -1.2882 | -.2954 | -.1639 | -.0958 | -.0904 |       |       |
| PHI     | .6520 | .7290 | .7790 | .8210 | .8790  | .9210  | .9600  | .9990  | -1.5267 | -.3268 | -.1883 | -.1276 | -.1060 |       |       |

PHI

X/LB

PHI

X/LB

PHI

X/LB

PHI

X/LB

PHI

X/LB

PHI

X/LB

PHI

X/LB

PHI

X/LB

PHI

X/LB

PHI

ALPHA ( 5 ) = 11.926 BETA ( 1 ) = -7.855 MACH = .59628 Q = 593.97 P = 2386.5 RN/L = 4.8170

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0300 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |        |       |       |       |       |       |       |
| 20.000  | .0000 | .9228 | .7661 | .3639 | .2197 | .1376 |       | .0388 | .0321  | .0385 | .0385 | .0556 | .0847 | .1320 | .1455 |
| 40.000  |       |       |       | .4505 | .2783 | .1697 | .0863 | .0533 | .0467  |       |       |       |       |       |       |
| 55.000  |       |       |       | .5940 | .3736 | .2631 | .1847 | .1146 | .0793  | .0861 | .0861 | .1215 | .1495 | .1526 | .2115 |
| 70.000  |       |       |       | .5707 | .3012 | .2767 | .1736 | .0639 | -.0135 |       |       |       |       |       |       |
| 90.000  |       |       |       | .4885 | .3153 | .2109 | .1536 | .0329 | -.0840 |       |       |       |       |       |       |
| 120.000 |       | .5487 |       | .4048 | .2555 | .1973 | .1161 | .0198 | -.0840 |       |       |       |       |       |       |
|         |       |       |       | .2208 | .0868 | .0015 | .0417 | .0376 | -.1778 |       |       |       |       |       |       |
|         |       |       |       |       |       |       |       |       | -.3207 |       |       |       |       |       |       |



DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(X58817)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 5 ) = 11.949 BETA ( 2 ) = -3.840

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | 0.000  | 0.080  | 0.230  | 0.460  | 0.700  | 1.120  | 1.580  | 1.660   | 1.770  | 2.040  | 2.510  | 3.010  | 3.780 | 4.970 | 5.740 |
|---------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|-------|-------|-------|
| PHI     |        |        |        |        |        |        |        |         |        |        |        |        |       |       |       |
| 180.000 | .9494  | .1113  | -.0039 | -.0234 | -.0469 | .0330  | .2083  | -.18450 | -.2917 | -.1515 | -.0845 | -.0883 |       |       |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990   | 1.0180 | 1.0460 |        |        |       |       |       |
| PHI     |        |        |        |        |        |        |        |         |        |        |        |        |       |       |       |
| .000    | .1482  | .0977  | .0289  | -.0617 | -.0972 | -.1738 | -.1903 | -.0724  | -.1468 |        |        |        |       |       |       |
| 40.000  | .1760  | .0564  | -.0338 | -.1177 | -.0884 | -.1654 | -.0829 | -.1177  |        |        |        |        |       |       |       |
| 70.000  | -.4842 | -.3316 | -.1433 | .0810  | -.0104 | .0089  | -.0458 |         |        |        |        |        |       |       |       |
| 90.000  | -.3455 | -.2260 | -.0589 | .1376  | -.0478 | -.0598 | -.1044 |         |        |        |        |        |       |       |       |
| 105.000 |        | -.0042 | .2643  | -.1172 | -.1109 | -.1643 |        |         |        |        |        |        |       |       |       |
| 110.000 |        |        | .0785  | .1679  | -.2682 | -.1939 | -.1666 | -.2599  |        |        |        |        |       |       |       |
| 120.000 | -.3175 | -.0650 | .0811  | .1204  | -.2619 | -.1939 | -.2169 | -.2175  |        |        |        |        |       |       |       |
| 135.000 | -.1886 | -.0973 | .0621  | .2495  | -.1996 | -.1720 | -.1737 |         |        |        |        |        |       |       |       |
| 150.000 | -.1395 | .0504  |        | -.0300 | -.1260 | -.1680 |        |         |        |        |        |        |       |       |       |
| 165.000 | -.1058 | -.0188 | .1107  | .3823  |        |        |        |         |        |        |        |        |       |       |       |

ALPHA ( 5 ) = 11.954 BETA ( 3 ) = .189 MACH = .58628 Q = 593.97 P = 2386.5 RN/L = 4.8170

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | 0.000 | 0.080 | 0.230 | 0.460  | 0.700  | 1.120  | 1.580  | 1.660  | 1.770   | 2.040   | 2.510  | 3.010  | 3.780  | 4.970  | 5.740 |
|---------|-------|-------|-------|--------|--------|--------|--------|--------|---------|---------|--------|--------|--------|--------|-------|
| PHI     |       |       |       |        |        |        |        |        |         |         |        |        |        |        |       |
| .000    | .9579 | .8177 | .4058 | .2611  | .1747  | .0907  | .0648  | .0577  | .0536   | .0552   | .0774  | .1071  | .1531  | .1618  |       |
| 20.000  |       | .4188 | .4219 | .2511  | .1618  | .0936  | .0354  | .0367  | -.0135  | -.0213  | .0384  | .0819  | .1136  | .1829  |       |
| 40.000  |       |       | .3255 | .1597  | .0730  | -.0186 | -.1005 | -.1757 | -.1757  | -.2167  | -.2885 | -.2063 | -.1656 | -.1592 |       |
| 55.000  |       |       | .2498 | .1002  | .0161  | -.0024 | -.1086 | -.2167 | -.3051  | -.3013  | -.2113 | -.1668 | -.1607 | -.1607 |       |
| 70.000  |       | .2787 | .2105 | .0888  | .0252  | -.0117 | -.1145 | -.4323 | -.4055  | -.4001  | -.2558 | -.2386 |        |        |       |
| 90.000  |       |       | .1231 | .0159  | -.0524 | .0142  | -.0473 | -.5657 | -.7893  | -.4460  | -.1935 | -.1053 | -.1085 |        |       |
| 120.000 |       |       | .0443 | .0023  | -.0496 | .0301  | .2668  | -.1328 | -.1613  |         |        |        |        |        |       |
| 150.000 |       |       |       |        |        |        | .2946  |        |         | -.14574 | -.3195 | -.1618 | -.0807 | -.0776 |       |
| 162.000 |       |       |       |        |        |        |        |        |         |         |        |        |        |        |       |
| 165.000 |       |       |       |        |        |        |        |        |         |         |        |        |        |        |       |
| 174.000 |       |       |       |        |        |        |        |        |         |         |        |        |        |        |       |
| 180.000 | .9579 | .1070 | .0040 | -.0169 | -.0322 | .0456  | .4547  | .2459  | -.16778 | -.2850  | -.1475 | -.0759 | -.0681 |        |       |
| X/LB    | .6520 | .7290 | .7790 | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180  | 1.0460  |        |        |        |        |       |
| PHI     |       |       |       |        |        |        |        |        |         |         |        |        |        |        |       |
| .000    | .1495 | .1022 | .0297 | -.0585 | -.1010 | -.1830 | -.1902 | -.0719 | -.1479  |         |        |        |        |        |       |
| 40.000  | .1663 |       | .0518 | -.0428 | -.1308 | -.1061 | -.1473 | -.0697 | -.1301  |         |        |        |        |        |       |

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 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB17)

ALPHA ( 5 ) = 11.954 BETA ( 3 ) = .189

| SECTION ( 1 ) ORBITER FUSELAGE |        | DEPENDENT VARIABLE CP |        |        |        |                                       |
|--------------------------------|--------|-----------------------|--------|--------|--------|---------------------------------------|
| X/LB                           |        | .6520                 | .7290  | .7790  | .8210  | .8790 .9210 .9600 .9980 1.0180 1.0460 |
| PHI                            |        |                       |        |        |        |                                       |
| 70.000                         | -.5064 | -.3737                | -.1805 | .0153  | -.0842 | -.0515 -.0854                         |
| 90.000                         | -.3641 | -.2627                | -.0855 | .0446  | -.1454 | -.1172 -.1321                         |
| 105.000                        |        |                       | .0056  | .0933  | -.2257 | -.1719 -.1957                         |
| 110.000                        |        |                       |        |        |        | -.2741                                |
| 120.000                        | -.2126 | -.1056                | .0673  | .1703  | -.2967 | -.2387 -.2020                         |
| 135.000                        |        |                       | .0442  | .3154  | -.3159 | -.2306 -.2234                         |
| 150.000                        | -.1479 | -.0793                | .1089  | .4816  | -.2997 | -.2.86 -.2023                         |
| 165.000                        | -.0959 | .1322                 | .1322  | -.1514 | -.2367 | -.1668                                |
| 180.000                        | -.0869 | .0007                 | .1487  | .4361  |        |                                       |

ALPHA ( 5 ) = 11.952 BETA ( 4 ) = 4.250 MACH = .59628 Q = 593.97 P = 2386.5 RNL = 4.8170

| SECTION ( 1 ) ORBITER FUSELAGE |        | DEPENDENT VARIABLE CP |        |        |                                       |   |
|--------------------------------|--------|-----------------------|--------|--------|---------------------------------------|---|
| X/LB                           |        | .0000                 | .0080  | .0230  | .0460                                 | .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740 |
| PHI                            |        |                       |        |        |                                       |   |
| .000                           | .9367  | .7939                 | .3928  | .2467  | .1541                                 | .0533 .0405 .0659 .0978 .1449 .1551                               |
| 20.000                         |        |                       | .3587  | .2245  | .1217                                 | .0226   |
| 40.000                         |        |                       | .3022  | .1644  | .0738                                 | -.0418  |
| 55.000                         |        |                       | .1803  | .0359  | -.0476                                | -.1907  |
| 70.000                         |        |                       | .1239  | -.0101 | -.0790                                | -.1208  |
| 90.000                         | .1153  |                       | .1000  | -.0221 | -.0609                                | -.0751  |
| 110.000                        |        |                       | .0589  | -.0361 | -.0974                                | -.0240  |
| 140.000                        |        |                       | .0141  | -.0185 | -.0759                                | .1627   |
| 150.000                        |        |                       |        |        |                                       | -.2409  |
| 162.000                        |        |                       |        |        |                                       | -.2507  |
| 165.000                        |        |                       |        |        |                                       | -1.4075   |
| 174.000                        | .9367  | .0772                 | .0081  | -.0173 | -.0559                                | .2405   |
| 180.000                        | .6520  | .7290                 | .7790  | .8210  | .8790 .9210 .9600 .9980 1.0180 1.0460 | .2310   |
| X/LB                           |        |                       |        |        |                                       |   |
| PHI                            |        |                       |        |        |                                       |   |
| .000                           | .1447  | .0978                 | .0332  | -.0673 | -.1043                                | -.1635 -.1994   |
| 40.000                         | .1456  |                       | .0453  | -.0474 | -.1390                                | -.1268 -.1481   |
| 70.000                         | -.5072 | -.3874                | -.2136 | -.0465 | -.1404                                | -.1100 -.1262   |
| 90.000                         | -.3724 | -.2923                | -.1305 | -.0684 | -.2293                                | -.1735 -.1682   |
| 105.000                        |        |                       | -.0619 | -.0224 | -.3311                                | -.2265 -.2229   |
| 110.000                        |        |                       |        |        |                                       | -.3112  |
| 120.000                        | -.2031 | -.1571                | -.0441 | .0133  | -.4159                                | -.2582  |
| 135.000                        |        |                       | .0719  | .3687  | -.3871                                | -.2545  |
| 150.000                        | -.1083 | -.0462                | .1308  | .4253  | -.4075                                | -.3152 -.2449   |

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TABULATED PRESSURE DATA - 0A148 - AMES 11-073-1)

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AMES 11-073(0A148) - 140A/B/C/R ORB FUSELAGE

(X68817)

ALPHA ( 5 ) = 11.952 BETA ( 4 ) = 4.250

SECTION ( 1 ) ORBITTER FUSELAGE DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 9600 .9990 1.0180 1.0460

PHI

165.000 -.0928 .1114 -.2721 -.3211 - 1705  
180.000 -.1110 -.0290 .1033 .3994

ALPHA ( 5 ) = 11.942 BETA ( 5 ) = 8.320 MACH = .9628 Q = 593.97 P = 2386.5 RN/L = 4.8170

SECTION ( 1 ) ORBITTER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 1580 .1650 .1770 .2040 .2510 .3010 .3780 .4870 .5740

PHI

.0000 .8815 .7548 .3613 .2279 .1234 .0407 .0296 .0217 .0475 .0956 .1355 .1368  
20.000 .2888 .1562 .0754 .0262 -.0165 -.0336 -.1948 -.1240 -.1205 -.0431 .0305 .1307  
40.000 .1609 .0480 .0196 -.0809 -.1240 -.2763 -.2763  
55.000 .0171 -.1133 .1639 -.2378 -.2341 -.2341  
70.000 .0159 .1121 .1732 -.1493 -.2401 -.2401  
90.000 -.0708 .0064 .1183 .1481 .1393 .1986  
120.000 .0250 .1061 .1539 .0725 .0550  
140.000 -.0487 -.0624 -.1243 -.0527  
150.000  
162.000  
165.000  
169.000  
174.000  
180.000

.3418

.8815 .0192 -.0264 -.0452 -.0977 -.0091 .1782 .1363  
.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

X/LB

PHI

.0000 .1330 .0870 .0294 -.0740 -.1005 -.1835 -.1992  
40.000 .1318 .0325 -.0534 .1510 .1325 .1548  
70.000 .4933 .4184 .2505 .1357 .2056 .1574 .1630  
90.000 .3778 .3321 .2209 .1415 .2845 .2083 .1930  
105.000 .1678 .1402 .4537 .3026 .2823  
110.000  
120.000 .2352 .2428 .1241 .0582 .5471 .4029 .3241  
135.000 .0375 .4573 .5271 .3647 .3099  
150.000 .1154 .0716 .0489 .3926 .5443 .4157 .3219  
165.000 .1519 .0167 .4948 .4326 .2244  
180.000 .1904 .1243 .0290 .1787



DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) - 140A/B/C/R ORB FUSELAGE

(XES9818)

ALPHA ( 1 ) = -4.042 BETA ( 2 ) = .192 MACH = 1.3965 Q = 599.95 P = 439.47 RN/L = 2.9144

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | PHI    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| 20.000  | 1.4793 | .6769 | .2123 | .0807 | .0186 | .0096 | .0487 | .0046 | .0446  | .0316  | -.0001 | -.0111 | -.0425 | -.0520 | -.0512 |       |
| 40.000  |        |       | .2471 | .0892 | .0096 | .0096 | .0480 | .0480 | .0473  | -.0473 |        |        |        |        |        |       |
| 55.000  |        |       | .3886 | .1134 | .0542 | .0542 | .1693 | .0458 | .1198  | -.1198 | -.1155 | -.1065 | -.0603 | -.0776 | -.0451 |       |
| 70.000  |        |       | .5077 | .2361 | .1693 | .1693 | .0458 | .1495 | .0321  | .0321  |        |        |        |        |        |       |
| 90.000  |        | .8001 | .5816 | .3084 | .2238 | .1346 | .1346 | .2069 | .0723  | .0723  | -.2450 | -.1633 | -.1074 | .0042  |        |       |
| 120.000 |        |       | .6438 | .3835 | .2356 | .1644 | .1644 | .4637 | .0101  | .0101  | -.2395 | -.2394 | -.1283 | -.0039 |        |       |
| 140.000 |        |       | .7200 | .5256 | .3588 | .3588 | .3588 |       | .0468  | .0468  | -.1861 | -.4021 | -.1771 | -.0496 |        |       |
| 150.000 |        |       | .7476 | .6135 | .4546 | .4546 | .5155 | .9311 | -.1675 | -.1675 | -.2995 | -.1820 | -.1392 | -.0713 |        |       |
| 165.000 |        |       |       |       |       |       |       |       | .6563  |        |        |        |        |        |        |       |
| 174.000 |        |       |       |       |       |       |       |       | .7416  |        |        |        |        |        |        |       |
| 180.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |        |       |

1.0379

1.0962

1.0377

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1.0379

| X/LB    | PHI    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| 20.000  | 1.4793 | .6769 | .2123 | .0807 | .0186 | .0096 | .0487 | .0046 | .0446  | .0316  | -.0001 | -.0111 | -.0425 | -.0520 | -.0512 |       |
| 40.000  |        |       | .2471 | .0892 | .0096 | .0096 | .0480 | .0480 | .0473  | -.0473 |        |        |        |        |        |       |
| 55.000  |        |       | .3886 | .1134 | .0542 | .0542 | .1693 | .0458 | .1198  | -.1198 | -.1155 | -.1065 | -.0603 | -.0776 | -.0451 |       |
| 70.000  |        |       | .5077 | .2361 | .1693 | .1693 | .0458 | .1495 | .0321  | .0321  |        |        |        |        |        |       |
| 90.000  |        | .8001 | .5816 | .3084 | .2238 | .1346 | .1346 | .2069 | .0723  | .0723  | -.2450 | -.1633 | -.1074 | .0042  |        |       |
| 120.000 |        |       | .6438 | .3835 | .2356 | .1644 | .1644 | .4637 | .0101  | .0101  | -.2395 | -.2394 | -.1283 | -.0039 |        |       |
| 140.000 |        |       | .7200 | .5256 | .3588 | .3588 | .3588 |       | .0468  | .0468  | -.1861 | -.4021 | -.1771 | -.0496 |        |       |
| 150.000 |        |       | .7476 | .6135 | .4546 | .4546 | .5155 | .9311 | -.1675 | -.1675 | -.2995 | -.1820 | -.1392 | -.0713 |        |       |
| 165.000 |        |       |       |       |       |       |       |       | .6563  |        |        |        |        |        |        |       |
| 174.000 |        |       |       |       |       |       |       |       | .7416  |        |        |        |        |        |        |       |
| 180.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |        |       |

1.0379

1.0962

1.0377

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1.0379

| X/LB    | PHI    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| 20.000  | 1.4640 | .6615 | .2083 | .0697 | .0210 | .0025 | .0369 | .0056 | .0565  | -.0416 | -.0079 | -.0100 | -.0321 | -.0622 | -.0614 |       |
| 40.000  |        |       | .2198 | .0783 | .0025 | .0025 | .0369 | .0056 | .0486  | -.0332 | -.0736 | -.0722 | -.0516 | -.0710 | -.0363 |       |
| 55.000  |        |       | .3250 | .0881 | .0025 | .0025 | .0369 | .0056 | .0361  | -.0768 | -.0736 | -.0722 | -.0516 | -.0710 | -.0363 |       |
| 70.000  |        |       | .4159 | .1618 | .1061 | .1061 | .0068 | .0429 | .0043  | .0043  |        |        |        |        |        |       |
| 90.000  |        | .6507 | .4782 | .2119 | .1386 | .0583 | .0583 | .0949 | .0193  | .0193  | -.2880 | -.2229 | -.1365 | -.0098 |        |       |
| 120.000 |        |       | .5362 | .2799 | .1400 | .0751 | .0751 | .1233 | -.1062 | -.1062 | -.3025 | -.3000 | -.1519 | -.0148 |        |       |
|         |        |       | .6269 | .4386 | .2690 | .2690 | .2690 | .3504 | -.0566 | -.0566 | -.2517 | -.4528 | -.2362 | -.0762 |        |       |

1.0379

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(XEBB13)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 1 ) = -4.051 BETA ( 3 ) = 4.285

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|

PHI

|         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| 140.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 150.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 151.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 162.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 165.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 164.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 174.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 180.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

X/LB

PHI

|         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| 40.000  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 70.000  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 90.000  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 105.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 110.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 120.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 135.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 150.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 165.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 180.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

ALPHA ( 2 ) = -.030 BETA ( 1 ) = -3.874 MACH = 1.3950 Q = 599.63 F = 440.18 RN/L = 2.9101

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|

PHI

|         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| 20.000  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40.000  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 55.000  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 70.000  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 90.000  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 120.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 140.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 150.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 162.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 174.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 180.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

1.0324

DATE 10 FEB 76 TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
AMES 11-07310A148) -140A/B/C/R ORB FUSELAGE

'XCE8818)

ALPHA ( 2 ) = -.030 BETA ( 1 ) = -3.874

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI 180.000 1.4796 .8957 .6044 .5045 .3468 .3703 .9503 -.2963 -.3359 -.1962 -.1668 -.0533

X/LB .6520 .7290 .7790 .9210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI .000 .0108 .0108 .0108 -.0358 -.0996 -.1494 -.2145

40.000 -.0062 -.0114 -.0432 -.0432 -.1172 -.0834 -.2395

70.000 .0153 -.0659 -.1262 .0427 .0685 -.0164 -.0012

90.000 .0425 -.0178 -.0849 .1278 .1228 -.0208 -.0770

105.000 .0132 .1819 -.0531 -.0899 -.1231

110.000 -.0211 -.0175 .2765 .2231 .0278 -.1133 -.1357

120.000 .3324 .3316 .3367 -.0271 -.0172

135.000 -.0290 .0046 .3171 .3245 .0497 .1185 .0460

150.000 -.0282 .3171 .4042 .2275 -.2464

180.000 -.0275 .0152 .3099 .3194

ALPHA ( 2 ) = -.025 BETA ( 2 ) = .186 MACH = 1.3950 Q = 599.65 P = 440.18 RN/L = 2.9101

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI .000 1.4846 .8032 .3371 .1663 .0919 .0235

20.000 .3573 .1805 .0872 .0235

40.000 .4775 .2137 .1429 .0405

60.000 .5573 .2977 .2203 .0988

80.000 .5945 .3302 .2468 .1444

100.000 .6298 .3757 .2430 .1640

120.000 .6507 .4742 .3115 .2960

140.000 .6421 .5249 .3354 .3617

160.000 .5160 .1504

180.000 .1504

PHI .000 .0192 .0093 .0083 -.0120 -.0240

40.000 .0043 .0033 .0026 -.0374 -.0193

70.000 .1061 .1234 .1234 .1341 .1357

90.000 .1621 .2304 .2116 .2146 .2146

110.000 .4758 .0669 .1965 .3828 .1668

130.000 .1927 .3539 .2442 .1504 .0675

150.000 .6389 .7168

170.000 .2004 .3219 .2089 .1642 .0704

190.000 .3475 .3496 .1642 .1518 .0720

PHI .000 .4033 .4199

40.000 .4031 .3136

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XE8B18)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = -.025 ; BETA ( 2 ) = .185

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

|         |        |        |        |       |        |        |        |
|---------|--------|--------|--------|-------|--------|--------|--------|
| 70.000  | -.0032 | -.0956 | -.1250 | .0718 | .0230  | -.0495 | -.0542 |
| 90.000  | .0282  | -.0439 | .0171  | .0992 | -.0218 | -.0543 | -.0974 |
| 105.000 |        |        | .1538  | .1305 | -.1215 | -.1176 | -.1418 |
| 110.000 |        |        |        |       |        |        | -.2428 |
| 120.000 | .0121  | .0071  | .2667  | .1978 | .0037  | -.1483 | -.2179 |
| 135.000 |        |        | .2816  | .3385 | .0807  | -.0329 | -.0763 |
| 150.000 | -.0047 | .0223  | .2939  | .3577 | .1179  | .0510  | -.0268 |
| 165.000 | -.0108 |        | .3115  |       | .3362  | .1316  | -.2810 |
| 180.000 | -.0122 | .0183  | .3237  | .4349 |        |        |        |

ALPHA ( 2 ) = -.030 BETA ( 3 ) = .4265 MACH = 1.3950 Q = 599.63 P = 440.18 RN/L = 2.9101

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0030 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

|         |        |       |       |       |       |       |        |        |        |        |        |        |        |
|---------|--------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|
| 20.000  | 1.4704 | .7843 | .3257 | .1536 | .0912 |       | -.0159 | -.0150 | .0003  | .0230  | .0053  | -.0253 | -.0320 |
| 40.000  |        |       | .3234 | .1522 | .0689 | .0181 | -.0143 | -.0207 |        |        |        |        |        |
| 60.000  |        |       | .3981 | .1679 | .1033 | .0217 | -.0181 | -.0101 | .0010  | -.0205 | -.0063 | -.0443 | -.0277 |
| 80.000  |        |       | .4566 | .2125 | .1529 | .0409 | .0535  | .0633  |        |        |        |        |        |
| 100.000 |        |       | .4876 | .2284 | .1581 | .0660 | .0989  | .0741  | -.2552 | -.1678 | -.1496 | -.0455 |        |
| 120.000 | .6208  |       | .5239 | .2761 | .1506 | .0762 | .1546  | -.0300 | -.2690 | -.2711 | -.1710 | -.0502 |        |
| 140.000 |        |       | .5709 | .3914 | .2286 | .2162 | .3663  | -.0305 | -.2666 | -.4515 | -.1862 | -.0656 |        |
| 160.000 |        |       | .5888 | .4868 | .3084 | .3043 | .8203  | -.1938 | -.3523 | -.2386 | -.1976 | -.0836 |        |
| 180.000 |        |       |       |       |       |       | .5333  | -.2440 |        |        |        |        |        |
|         |        |       |       |       |       |       | .6363  |        |        |        |        |        |        |
|         |        |       |       |       |       |       | .9451  | -.2124 | -.3621 | -.1829 | -.1833 | -.0935 |        |
|         |        |       |       |       |       |       | .9723  | -.3170 | -.3387 | -.2052 | -.1667 | -.0990 |        |
|         |        |       |       |       |       |       | .9990  | 1.0180 | 1.0460 |        |        |        |        |

X/LB

PHI

|         |        |        |        |        |        |        |        |
|---------|--------|--------|--------|--------|--------|--------|--------|
| 40.000  | -.0159 | .0189  | .0095  | -.0341 | -.0989 | -.1437 | -.2170 |
| 60.000  | .0189  | .0244  | -.0182 | -.1015 | -.0994 | -.2009 | -.4271 |
| 80.000  | -.0057 | -.1165 | .0909  | .0013  | -.0853 | -.1002 | -.3952 |
| 100.000 | .0227  | -.0597 | .0378  | .0037  | -.0599 | -.0982 | -.1350 |
| 120.000 |        |        | .1725  | .1323  | -.1580 | -.1748 |        |
| 140.000 |        |        |        |        |        |        | -.2717 |
| 160.000 | .0146  | .0088  | .2250  | .0548  | -.0738 | -.2179 | -.2774 |
| 180.000 | .2881  | .2908  | .2965  | .2965  | -.0009 | -.1010 | -.1422 |
|         | -.0085 | .0265  | .3045  | .0803  | -.0277 | -.1086 |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8818)

ALPHA ( 2 ) = -.030 BETA ( 3 ) = 4.265

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290 | .7790 | .8210 | .8780 | .9210 | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|--------|-------|-------|-------|-------|-------|--------|-------|--------|--------|
| PHI     |        |       |       |       |       |       |        |       |        |        |
| 165.000 | -.0175 | .3031 |       |       |       |       |        |       |        |        |
| 180.000 | -.0288 | .0227 | .3137 | .3222 | .2464 | .0597 | -.3132 |       |        |        |

ALPHA ( 3 ) = 3.919 BETA ( 1 ) = -3.877 MACH = 1.3940 Q = 599.41 P = 440.65 RN/L = 2.9155

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|
| PHI     |        |       |       |       |       |       |       |       |       |        |       |       |       |       |       |
| .000    | 1.4689 | .9247 | .4379 | .2686 | .1663 |       |       | .0462 |       | .0345  | .0416 | .0360 | .0520 | .0232 | .0174 |
| 20.000  |        |       | .4835 | .2934 | .1772 | .0761 |       | .0621 |       | .0240  | .0607 | .0323 | .0472 | .0156 | .0326 |
| 40.000  |        |       | .6264 | .3529 | .2580 | .1348 |       | .0922 |       | .0240  |       |       |       |       |       |
| 55.000  |        |       | .6940 | .4368 | .3493 | .2091 |       | .1830 |       | .1755  |       |       |       |       |       |
| 70.000  |        |       | .7018 | .4466 | .3444 | .2301 |       | .1897 |       | .2149  |       |       |       |       |       |
| 90.000  |        | .8732 | .7011 | .4587 | .3330 | .2370 |       | .2685 |       | .1918  |       |       |       |       |       |
| 120.000 |        |       | .6577 | .4715 | .3308 | .3000 |       | .5561 |       | .1758  |       |       |       |       |       |
| 140.000 |        |       |       |       |       |       |       |       |       | .1087  |       |       |       |       |       |
| 150.000 |        |       | .5665 | .4421 | .2744 | .2948 |       | .9385 |       | -.1235 |       |       |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |       |        |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |       |        |       |       |       |       |       |
| 169.000 |        |       |       |       |       |       |       |       |       |        |       |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |       |        |       |       |       |       |       |
| 180.000 |        |       |       |       |       |       |       |       |       |        |       |       |       |       |       |

.9508

.9880

.7049

.7466

-.2441

-.3558

-.2751

-.1828

-.0951

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|
| PHI     |        |        |        |        |        |        |        |       |        |        |
| 40.000  | .0397  | .0487  | .0648  | .0282  | -.0323 | -.0862 | -.1585 |       |        |        |
| 70.000  | .0593  | .0652  | .0552  | .0294  | -.0537 | -.0392 | -.1512 |       |        |        |
| 90.000  | -.0501 | -.1527 | -.1991 | -.0950 | -.0236 | -.0756 | -.0588 |       |        |        |
| 105.000 | -.0158 | -.0920 | -.1692 | .0508  | -.0633 | -.0973 | -.1365 |       |        |        |
| 110.000 |        |        | -.1086 | .1129  | -.1028 | -.2014 | -.1730 |       |        |        |
| 120.000 |        |        |        |        |        |        |        |       |        |        |
| 135.000 | -.0773 | -.1069 | .1970  | .1458  | -.0130 | -.1628 | -.2148 |       |        |        |
| 150.000 | -.0499 | .0003  | .2310  | .2282  | -.0208 | -.1279 | -.0889 |       |        |        |
| 165.000 | -.0416 |        | .2262  | .2317  | -.0585 | .0469  | -.0254 |       |        |        |
| 180.000 | -.0349 | .0555  | .2327  | .2730  | .2768  | .1718  | -.2361 |       |        |        |

.9092

-.3155

-.3816

-.2407

-.1994

-.0769

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-07310A148) -140A/B/C/R ORB FUSELAGE

(XE8818)

ALPHA ( 3 ) = 3.922 BETA ( 2 ) = .185 MACH = 1.3940 Q = 599.41 P = 440.65 RN/L = 2.9155

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |       |        |        |        |        |        |       |
| .000    | 1.4709 | .9259 | .4437 | .2661 | .1784 |       |       | .0511 |       | .0369  | .0254  | .0517  | .0563  | .0264  | .0233 |
| 20.000  |        |       | .4584 | .2733 | .1684 | .0873 |       | .0499 |       | .0259  |        |        |        |        |       |
| 40.000  |        |       | .5513 | .3063 | .2228 | .1110 |       | .0788 |       | .0159  | .0698  | .0396  | .0472  | .0138  | .0207 |
| 55.000  |        |       | .5909 | .3426 | .2697 | .1394 |       | .1195 |       | .1126  |        |        |        |        |       |
| 70.000  |        |       | .5942 | .3392 | .2543 | .1493 |       | .1176 |       | .1565  | -.1770 | -.1029 | -.0977 | -.1084 |       |
| 90.000  |        | .7350 | .6002 | .3582 | .2429 | .1536 |       | .2018 |       | .1109  | -.1871 | -.1884 | -.1425 | -.0922 |       |
| 120.000 |        |       | .5859 | .4047 | .2638 | .2378 |       | .4797 |       | .0832  | -.1919 | -.3636 | -.2009 | -.1040 |       |
| 140.000 |        |       |       |       |       |       |       |       |       | .0025  | -.3979 | -.2910 | -.1729 | -.0693 |       |
| 150.000 |        |       | .5339 | .4322 | .2517 | .2695 |       | .8410 |       | -.6216 |        |        |        |        |       |
| 162.000 |        |       |       |       |       |       |       |       |       | .6903  |        |        |        |        |       |
| 165.000 |        |       |       |       |       |       |       |       |       | -.2449 | -.3623 | -.2545 | -.1869 | -.0594 |       |
| 169.000 |        |       |       |       |       |       |       |       |       |        |        |        |        |        |       |
| 174.000 |        |       |       |       |       |       |       |       |       |        |        |        |        |        |       |
| 180.000 |        |       |       |       |       |       |       |       |       |        |        |        |        |        |       |

X/LB

PHI

| X/LB    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |        |        |        |        |        |        |        |        |        |        |        |        |       |
| .000    | 1.4709 | .7458 | .4938  | .4185  | .2719  | .2780  |        | .9437  |        | -.3848 | -.3949 | -.2123 | -.1909 | -.0558 |       |
| 20.000  |        |       | .0720  | .0734  | -.0292 | -.0764 | -.1586 |        | -.3740 | -.3906 |        |        |        |        |       |
| 40.000  |        |       | .0772  | .0428  | -.0376 | -.0417 | -.1425 |        | -.3714 | -.2802 |        |        |        |        |       |
| 70.000  |        |       | -.1974 | -.0343 | -.0527 | -.1101 | -.1080 |        |        |        |        |        |        |        |       |
| 90.000  |        |       | -.1202 | .0341  | -.1260 | -.1238 | -.1590 |        |        |        |        |        |        |        |       |
| 105.000 |        |       | .0788  | .0816  | -.1792 | -.2363 | -.1937 |        |        |        |        |        |        |        |       |
| 110.000 |        |       |        |        |        |        |        | -.2819 |        |        |        |        |        |        |       |
| 120.000 |        |       | .1917  | .1341  | -.0371 | -.1819 | -.2511 | -.2772 |        |        |        |        |        |        |       |
| 135.000 |        |       | .1978  | .2450  | .0328  | -.0828 | -.1239 |        |        |        |        |        |        |        |       |
| 150.000 |        |       | .2080  | .3269  | .0813  | .0006  | -.0786 |        |        |        |        |        |        |        |       |
| 165.000 |        |       | .2121  |        | .2721  | .0745  | -.2645 |        |        |        |        |        |        |        |       |
| 180.000 |        |       | .2245  | .4121  |        |        |        |        |        |        |        |        |        |        |       |

X/LB

ALPHA ( 3 ) = 3.923 BETA ( 3 ) = 4.255 MACH = 1.3940 Q = 599.41 P = 440.65 RN/L = 2.9155

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| .000    | 1.4584 | .9114 | .4318 | .2565 | .1763 |       |       | .0410 |       | .0258  | .0211  | .0400  | .0547  | .0186  | .0127  |
| 20.000  |        |       | .4220 | .2436 | .1492 | .0776 |       | .0348 |       | .0146  |        |        |        |        |        |
| 40.000  |        |       | .4671 | .2514 | .1708 | .0784 |       | .0521 |       | -.0012 | .0624  | .0255  | .0402  | -.0134 | -.0001 |
| 55.000  |        |       | .4824 | .2500 | .1905 | .0727 |       | .0597 |       | .0624  |        |        |        |        |        |
| 70.000  |        |       | .4862 | .2400 | .1691 | .0722 |       | .0649 |       | .1025  | -.2213 | -.1562 | -.1515 | -.1161 |        |
| 90.000  |        | .5823 | .5000 | .2602 | .1580 | .0715 |       | .1488 |       | .0304  | -.2404 | -.2283 | -.1918 | -.0980 |        |
| 120.000 |        |       | .5076 | .3372 | .1978 | .1720 |       | .3749 |       | -.0045 | -.2726 | -.4245 | -.1728 | -.0757 |        |

PHI

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TABULATED PRESSURE DATA - OA148 ( AMES 11-073-1 )

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AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

(XE8818)

ALPHA ( 3 ) = 3.923 BETA ( 3 ) = 4.255

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |       |       |        |        |        |        |       |
| 140.000 |        |       |       |       |       |       |       |       |       |       |        |        |        |        |       |
| 150.000 |        |       |       |       |       |       |       |       |       |       |        |        |        |        |       |
| 151.000 |        |       |       |       |       |       |       |       |       |       |        |        |        |        |       |
| 162.000 |        |       |       |       |       |       |       |       |       |       |        |        |        |        |       |
| 165.000 |        |       |       |       |       |       |       |       |       |       |        |        |        |        |       |
| 169.000 |        |       |       |       |       |       |       |       |       |       |        |        |        |        |       |
| 174.000 |        |       |       |       |       |       |       |       |       |       |        |        |        |        |       |
| 180.000 |        |       |       |       |       |       |       |       |       |       |        |        |        |        |       |
| X/LB    | 1.4584 | .7270 | .4945 | .4278 | .2765 | .2697 | .8921 | .9323 | .8994 | .9323 | -.3672 | -.2478 | -.2001 | -.0853 |       |
| PHI     |        |       |       |       |       |       |       |       |       |       |        |        |        |        |       |
| 140.000 |        |       |       |       |       |       |       |       |       |       |        |        |        |        |       |
| 150.000 |        |       |       |       |       |       |       |       |       |       |        |        |        |        |       |
| 151.000 |        |       |       |       |       |       |       |       |       |       |        |        |        |        |       |
| 162.000 |        |       |       |       |       |       |       |       |       |       |        |        |        |        |       |
| 165.000 |        |       |       |       |       |       |       |       |       |       |        |        |        |        |       |
| 169.000 |        |       |       |       |       |       |       |       |       |       |        |        |        |        |       |
| 174.000 |        |       |       |       |       |       |       |       |       |       |        |        |        |        |       |
| 180.000 |        |       |       |       |       |       |       |       |       |       |        |        |        |        |       |

X/LB

PHI

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

ALPHA ( 4 ) = 7.792 BETA ( 1 ) = -3.867 MACH = 1.3956 Q = 599.84 P = 439.94 RM/L = 2.9129

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| X/LB    | 1.4396 | 1.0404 | .5490 | .3699 | .2532 | .1562 | .1101 | .1101 | .0874 | .0807 | .0704 | .1045 | .0727 | .0922 |       |
| PHI     |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |

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REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8818)

ALPHA ( 4 ) = 7.751 BETA ( 2 ) = .182

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

70.000 -.1306 -.2449 -.2659 -.0964 -.1467 -.1572 -.1473  
 90.000 -.0736 -.1796 -.2227 -.0129 -.1893 -.2068 -.2004  
 105.000 .0549 -.0264 .0549 -.2230 -.2961 -.2774  
 110.000 .0660 -.0831 .0955 .0471 -.0807 -.2092 -.2764  
 120.000 .0976 .1546 -.0191 -.1256 -.1682  
 135.000 .0967 .3666 .0360 -.0539 -.1169  
 150.000 .1039 .2349 .0155 -.2799  
 165.000 .1265 .4311  
 180.000

-.3092  
 -.3247

ALPHA ( 4 ) = 7.919 BETA ( 3 ) = 4.252 MACH = 1.3956 Q = 599.84 P = 439.94 RN/L = 2.9129

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

1.4320 1.0285 .5458 .3762 .2632 .1390 .1390 .0815 .0741  
 20.000 .5287 .3478 .2305 .1325 .1325 .0909 .0698 .0698  
 40.000 .5337 .3381 .2423 .1325 .1325 .0309 .0698 .0715 .0879 .0433 .0566  
 55.000 .4993 .2855 .2092 .0746 .0822 .0613 .0216 .0216  
 70.000 .4743 .2440 .1717 .0822 .0635 .1035 .1809 .1322 .1438 .1903  
 90.000 .4707 .2419 .1546 .0654 .0893 .0784 .2093 .1761 .1853 .1528  
 120.000 .4435 .2713 .1537 .1340 .3837 .0271 .2525 .3971 .2197 .0991  
 140.000 .3924 .3189 .1561 .1577 .7434 .0955 .2792 .4398 .3271 .1789 .0567  
 150.000 .5131  
 162.000 .5846  
 165.000 .8475  
 169.000 .8949  
 174.000 .8056  
 180.000

-.2926 -.4293 -.2595 -.2086 -.0567

1.4320 .5855 .3772 .3400 .2013 .1884 .8949

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9990 1.0180 1.0460

PHI

1.278 .1066 .0399 -.0103 -.0921  
 40.000 .1674 .1258 .0404 -.0012 -.0895  
 70.000 .2577 .0949 .1420 .1735 .1963  
 90.000 .1403 .0303 .2151 .2057 .1985  
 105.000 .0255 .0034 .2772 .3298 .2718  
 110.000 .0722 .0705 .1275 .2738 .3623  
 120.000 .1465 .2296 .0798 .1713 .2115  
 135.000 .1595 .3017 .0457 .1261 .1048  
 150.000

-.3460 -.3593  
 -.3579 -.2622

-.3330  
 -.3887

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8818)

ALPHA ( 4 ) = 7.919 BETA ( 3 ) = 4.252

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0480

PHI

165.000 -.0321 .1114 .1803 -.0626 -.2958  
180.000 -.0453 -.0087 .1097 .3000

ALPHA ( 5 ) = 11.807 BETA ( 1 ) = -3.848 MACH = 1.3965 Q = 599.65 P = 439.24 RN/L = 2.9163

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LE .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1680 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.3916 1.1498 .6770 .4876 .3542 .2530 .2006 .1643 .1416 .1216 .1457 .1524 .1503  
.20.000 .7182 .3627 .5111 .5111 .3627 .2530 .2006 .1643 .1416 .1216 .1457 .1524 .1503  
40.000 .7898 .4258 .5495 .5495 .4258 .2924 .2430 .1548 .1727 .1778 .1770 .1445 .1695  
55.000 .7473 .4045 .4045 .4045 .4045 .2493 .2084 .1376 .1273 .1273 .1273 .1273 .1273  
70.000 .6758 .3402 .4335 .4335 .3402 .2386 .1904 .1273 .1273 .1273 .1273 .1273 .1273  
90.000 .6195 .2983 .4097 .4097 .2983 .1973 .1850 .1858 .1858 .1858 .1858 .1858 .1858  
120.000 .4947 .1843 .3106 .3106 .1843 .1611 .4332 .1090 .1194 .3032 .4334 .4860  
140.000 .3521 .1456 .2250 .2250 .1456 .1342 .8740 -.0786 .4706 .4268 .2552 .1589  
150.000 .6570  
151.000 .6899  
162.000 .8452  
165.000 .6757  
169.000 .6012  
174.000 .6757  
180.000 .6012

X/LB

1.3916 .4854 .2597 .2312 .1167 .1238 .6757 .6012 .9990 1.0180 1.0460

PHI

.000 .1776 .2000 .2228 .1848 .1271 .0790 -.0231  
40.000 .2242 .2540 .2540 .1995 .1117 .1028 -.0229  
70.000 .1778 .3334 .3638 .2770 .2053 .0562 -.0805  
90.000 .1504 .2606 .3033 .0864 .2043 .1915 -.0797  
105.000 .2625 .0065 .2163 .2960 .1731  
110.000 .2412  
120.000 .2495  
135.000 .1409 .0980 .1382 .1641  
153.000 .0971 .1667 .1385 .2322 .0475 .1320 .1976  
165.000 .0851 .0936 .2161 .0263 .2950  
180.000 .0585 .0607 .3736

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## TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) - 140A/B/C/R ORB FUSELAGE

(XEBB18)

ALPHA ( 5 ) = 11.815 BETA ( 2 ) = .187 MACH = 1.3965 Q = 599.65 P = 439.24 RN/L = 2.9163

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|
| PHI     | 1.3934 | 1.1488 | .6722 | .4888 | .3630 | .2378 | .1880 | .1804 | .1462  | .1638  | .1354  | .1280  | .1550  | .1598  | .1496  |
| 20.000  |        |        | .6818 | .4808 | .3407 | .2378 | .1804 | .1804 | .1462  | .1638  | .1354  | .1280  | .1550  | .1598  | .1496  |
| 40.000  |        |        | .6966 | .4823 | .3666 | .2461 | .1958 | .1958 | .1462  | .1638  | .1354  | .1280  | .1550  | .1598  | .1496  |
| 55.000  |        |        | .6240 | .4031 | .3099 | .1442 | .1184 | .1184 | .0598  | .0598  | .1261  | .1337  | .1581  | .1270  | .1503  |
| 70.000  |        |        | .5601 | .3398 | .2480 | .1513 | .1149 | .1149 | .0674  | .0674  | -.1173 | -.0738 | -.0888 | -.1699 |        |
| 90.000  |        | .6283  | .5205 | .3080 | .2094 | .1175 | .1182 | .1182 | .1626  | .1626  | -.1447 | -.0961 | -.1310 | -.1977 |        |
| 120.000 |        |        | .4301 | .2513 | .1493 | .1193 | .3995 | .3995 | .1180  | .1180  | -.1815 | -.3509 | -.4303 | -.2444 |        |
| 140.000 |        |        | .3242 | .2347 | .1240 | .1303 | .7326 | .7326 | .0223  | .0223  | -.4667 | -.3914 | -.1953 | -.0910 |        |
| 151.000 |        |        |       |       |       |       |       |       | .5868  | .5868  |        |        |        |        |        |
| 167.000 |        |        |       |       |       |       |       |       | .6346  | .6346  |        |        |        |        |        |
| 165.000 |        |        |       |       |       |       |       |       |        |        | -.3159 | -.4275 | -.3139 | -.1882 | -.0581 |
| 174.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |        |        |
| 180.000 | 1.3934 | .4628  | .2633 | .2494 | .1314 | .1307 | .7482 | .8137 |        |        | -.4407 | -.4566 | -.2712 | -.2024 | -.0446 |
| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |        |

## PHI

|         |        |        |        |        |        |        |        |        |        |  |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|--|--|--|--|--|
| .000    | .1707  | .1986  | .2367  | .1938  | .1316  | .0789  | -.0256 |        |        |  |  |  |  |  |  |
| 40.000  | .1979  |        | .2504  | .2116  | .1191  | .0902  | -.0285 | -.3137 | -.3349 |  |  |  |  |  |  |
| 70.000  | -.2270 | -.3537 | -.3893 | -.2070 | -.2565 | -.2378 | -.1369 | -.3358 | -.2762 |  |  |  |  |  |  |
| 90.000  | -.1419 | -.2356 | -.3005 | -.1069 | -.2539 | -.2729 | -.2246 |        |        |  |  |  |  |  |  |
| 105.000 |        |        | -.1967 | .0036  | -.3045 | -.3511 | -.3382 |        |        |  |  |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        | -.3297 |        |  |  |  |  |  |  |
| 120.000 | -.0984 | -.1208 | .0217  | -.0451 | -.1345 | -.2453 | -.3123 | -.3535 |        |  |  |  |  |  |  |
| 135.000 |        |        | .0103  | .0740  | -.0892 | -.1613 | -.2105 |        |        |  |  |  |  |  |  |
| 150.000 | -.0690 | -.0863 | -.1039 | .3298  | -.0237 | -.1101 | -.1642 |        |        |  |  |  |  |  |  |
| 165.000 | -.0448 |        | -.0564 |        | -.2259 | -.0303 | -.3068 |        |        |  |  |  |  |  |  |
| 180.000 | -.0372 | -.0318 | -.0331 | .4024  |        |        |        |        |        |  |  |  |  |  |  |

ALPHA ( 5 ) = 11.810 BETA ( 3 ) = 4.268 MACH = 1.3965 Q = 599.65 P = 439.24 RN/L = 2.9163

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | 1.3823 | 1.1370 | .6613 | .4844 | .3521 | .2061 | .1817 | .1817 | .1514  | .1514  | .1342  | .1194  | .1515  | .1477  | .1454 |
| 20.000  |        |        | .6450 | .4442 | .3130 | .2061 | .1505 | .1505 | .1254  | .1254  | .1042  | .0774  | .1306  | .1050  | .1224 |
| 40.000  |        |        | .6450 | .4075 | .3499 | .1861 | .1306 | .1306 | .0525  | .0525  | .0642  | .0774  | .1306  | .1050  | .1224 |
| 55.000  |        |        | .5036 | .2939 | .2092 | .0555 | .0472 | .0472 | -.0031 | -.0031 |        |        |        |        |       |
| 70.000  |        |        | .4493 | .2386 | .1615 | .0759 | .0600 | .0600 | .0243  | .0243  | -.1596 | -.1210 | -.1467 | -.2321 |       |
| 90.000  |        | .4878  | .4298 | .2154 | .1368 | .0503 | .0657 | .0657 | .0996  | .0996  | -.1880 | -.1482 | -.1804 | -.2419 |       |
| 120.000 |        |        | .3687 | .2016 | .1072 | .0875 | .3635 | .3635 | .0432  | .0432  | -.2384 | -.3812 | -.3705 | -.1448 |       |



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB18)

ALPHA ( 6 ) = 15.906 BETA ( 1 ) = -3.873

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |        |        |        |        |        |       |        |        |        |        |        |       |
| 180.000 | 1.3155 | .3183  | .1537  | .1370  | .0564  | .0636  | .7283  |       | -.4410 | -.4381 | -.3050 | -.1949 | -.0709 |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |        |        |        |       |
| PHI     |        |        |        |        |        |        |        |       |        |        |        |        |        |       |
| .000    | .7782  | .2997  | .3269  | .3105  | .2407  | .1568  | .0263  |       | -.2889 | -.3074 |        |        |        |       |
| 40.000  | .3158  | .3843  | .3201  | .3201  | .2191  | .1611  | .0260  |       | -.3248 | -.3067 |        |        |        |       |
| 70.000  | -.2541 | -.4417 | -.5220 | -.4600 | -.4446 | -.3849 | -.1660 |       |        |        |        |        |        |       |
| 90.000  | -.1429 | -.3107 | -.3714 | -.1949 | -.2671 | -.3005 | -.2422 |       |        |        |        |        |        |       |
| 105.000 |        | -.2929 | -.0358 | -.2813 | -.3569 | -.3594 |        |       |        |        |        |        |        |       |
| 110.000 |        |        |        |        |        |        |        |       |        |        |        |        |        |       |
| 120.000 | -.2252 | -.1942 | -.1064 | .0959  | -.1927 | -.2755 | -.2798 |       |        |        |        |        |        |       |
| 135.000 |        |        | -.0362 | .0363  | -.2021 | -.1803 | -.2134 |       |        |        |        |        |        |       |
| 150.000 | -.2854 | -.3209 | -.1769 | .1457  | -.3712 | -.2729 | -.2954 |       |        |        |        |        |        |       |
| 165.000 | -.1216 |        | -.2069 |        | .1672  | -.0518 | -.3169 |       |        |        |        |        |        |       |
| 180.000 | -.0790 | -.0991 | -.1022 | .3081  |        |        |        |       |        |        |        |        |        |       |

ALPHA ( 6 ) = 15.920 BETA ( 2 ) = .184 MACH = 1.3951 Q = 599.73 P = 440.18 RV/L = 2.9184

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1650 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| .000    | 1.3203 | 1.2496 | .8009 | .6058 | .4676 |       |       | .2722 | .2472  | .2176  | .1919  | .2208  | .2320  | .2333  |       |
| 20.000  |        |        | .8035 | .5936 | .4418 | .3241 |       | .2591 | .2259  | .1543  | .1607  | .1769  | .2094  | .2049  | .2283 |
| 40.000  |        |        | .7648 | .5628 | .4375 | .3141 |       | .2423 | .0434  |        |        |        |        |        |       |
| 55.000  |        |        | .6276 | .4102 | .3051 | .1213 |       | .0882 | .0515  | -.1121 | -.0775 | -.0861 | -.1959 |        |       |
| 70.000  |        |        | .5278 | .3263 | .2273 | .1426 |       | .0988 | .1445  | -.1389 | -.0818 | -.1171 | -.1997 |        |       |
| 90.000  | .5631  |        | .4674 | .2700 | .1830 | .0867 |       | .0912 | .1108  | -.1795 | -.3324 | -.5244 | -.3215 |        |       |
| 120.000 |        |        | .3476 | .1690 | .0610 | .0571 |       | .3155 | .0319  |        |        |        |        |        |       |
| 140.000 |        |        |       | .1310 | .0542 | .0626 |       | .6312 | -.1666 | -.4944 | -.4444 | -.2387 | -.1046 |        |       |
| 151.000 |        |        | .2237 |       |       |       |       |       | .5466  |        |        |        |        |        |       |
| 162.000 |        |        |       |       |       |       |       |       | .6046  |        |        |        |        |        |       |
| 165.000 |        |        |       |       |       |       |       |       |        | -.3503 | -.4535 | -.3360 | -.1846 | -.0636 |       |
| 174.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 180.000 | 1.3203 | .2848  | .1600 | .1642 | .0679 | .0645 | .6418 | .7377 |        |        |        |        |        |        |       |
| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| .000    |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 40.000  | .2700  | .3013  | .3533 | .3133 | .2474 | .1586 | .0204 |       | -.2842 | -.3072 |        |        |        |        |       |
|         | .2910  |        | .3744 | .3207 | .2257 | .1586 | .0245 |       | -.3198 | -.3191 |        |        |        |        |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/E/C/R ORB FUSELAGE

(XE8818)

ALPHA ( 6 ) = 15.920 BETA ( 2 ) = .184

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

70.000 -.3475 -.4885 -.5464 -.4639 -.5006 -.4341 -.2229  
 90.000 -.2123 -.3307 -.4027 -.2600 -.3728 -.3632 -.3004  
 105.000 .105.000 -.2910 -.0837 -.4069 -.4439 -.4092  
 110.000  
 120.000 -.1224 -.1628 -.0828 -.0276 -.1936 -.2554 -.3274  
 135.000 .135.000 .0038 -.0034 -.1162 -.1808 -.2325  
 150.000 -.1534 -.1716 -.1877 .2515 -.2773 -.2297 -.2651  
 165.000 -.0764 -.1092 .2405 -.0759 -.3375  
 180.000 -.0752 -.0568 -.0756 .3459

ALPHA ( 6 ) = 15.910 BETA ( 3 ) = 4.299 MACH = 1.3951 Q = 599.73 P = 440.18 RW/L = 2.9184

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.3174 1.2399 .7922 .5966 .4581 .2993 .2713 .2367 .2107 .1971 .2170 .2237 .2290  
 20.000 .20.000 .7541 .5529 .4088 .2993 .2314 .1998  
 40.000 .40.000 .6554 .4820 .3623 .2403 .1631 .0860 .0660 .1201 .1694 .1703 .1982  
 55.000 .55.000 .4944 .3017 .2021 .0219 .0048  
 70.000 .70.000 .4088 .2268 .1429 .0668 .0278 .0146 .0977 .1453 .1272 .1531 .2908  
 90.000 .90.000 .3855 .1870 .1123 .0236 .0392 .1749 .1324 .1739 .1324 .1739 .2465  
 120.000 .120.000 .3058 .1298 .0440 .0366 .2943 .0569 .2285 .3686 .4852 .2062  
 140.000 .140.000 .2067 .1315 .0576 .5993 .2829 .4911 .3847 .1836 .0742  
 150.000 .151.000  
 162.000 .162.000 .7021 .5338 .4662  
 165.000 .165.000  
 174.000 .174.000 .7946 .7946 .5915  
 180.000 .180.000 .13174 .2708 .1554 .1599 .0791 .0567 .3511 .4579 .2903 .1763 .0496  
 .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .2619 .3104 .3392 .2993 .2289 .1540 .0157  
 40.000 .40.000 .2569 .3612 .3089 .2133 .1523 .0199  
 70.000 .70.000 .4049 .5021 .4313 .3770 .3727 .2303  
 90.000 .90.000 .2242 .3531 .4030 .2687 .3984 .3763 .3382  
 105.000 .105.000 .2481 .1751 .5074 .5269 .4801  
 110.000 .110.000  
 120.000 .120.000 .1016 .1349 .0458 .1928 .1784 .2831 .3947  
 135.000 .135.000 .1807 .0541 .1810 .2575 .2844  
 150.000 .150.000 .0798 .0872 .1123 .2330 .0264 .1349 .2161

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(b)(3)(B)

$$\text{ALPHA ( 6, } = 15.913 \quad \text{BETA ( 3) } = 4.299$$

SECTION : ORBITER FUSELAGE

DEPENDENT VARIABLE CP

|      |       |       |       |       |       |       |       |       |        |        |
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| X/LB | .3520 | .7230 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|

1119

|         |        |        |
|---------|--------|--------|
| 165.000 | -.0586 | -.0893 |
| 180.000 | -.0763 | -.1061 |

|         |         |         |       |
|---------|---------|---------|-------|
| - .0388 | - .1062 | - .0883 | .3057 |
| - .0763 | - .1061 |         |       |

**.2777    -.0756    -.3397**

JAMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

## REFERENCE DATA

|       |   |           |        |      |   |           |     |    |
|-------|---|-----------|--------|------|---|-----------|-----|----|
| XSREF | = | 2690.0000 | SQ.FT. | XMRP | = | 1076.6800 | IN. | XO |
| LREF  | = | 474.8000  | IN.    | YMRP | = | .0000     | IN. | YO |
| ZREF  | = | 936.0680  | IN.    | ZMRP | = | 375.0000  | IN. | ZO |
| SCALE | = | .0300     |        |      |   |           |     |    |

ALPHA ( 1 ) = -4.048    BETA ( 1 ) = -3.848    MACH = 1.2478    Q = 600.12    P = 550.64    RN/L = 3.0180

## SECTION ( ) ORBITER FUSELAGE

| X/LB    | .0000  | .0080  | .0460 | .0700  | .1120  | .1580  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5770  |
|---------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PM      |        |        |       |        |        |        |        |        |        |        |        |        |        |
| .000    | 1.4040 | .6274  | .0642 | .0030  |        | -.0107 |        | -.0124 | -.0193 | -.0563 | -.0712 | -.1010 | -.0644 |
| 20.000  |        |        | .0729 | -.0152 | -.0640 | -.0431 |        | -.0694 |        |        |        |        |        |
| 40.000  |        |        | .1144 | .0336  | -.0591 | -.1059 |        | -.2060 | -.2046 | -.1522 | -.0901 | -.1261 | -.0809 |
| 50.000  |        |        | .5652 | .2207  | .1242  | .0829  |        | .0191  |        |        |        |        |        |
| 70.000  |        |        | .6055 | .3191  | .2698  | .1821  |        | .0723  | -.2790 | -.1304 | -.0721 | .0186  |        |
| 90.000  | .9209  |        | .4863 | .3686  | .3286  | .2407  |        | .0093  | -.2480 | -.2403 | -.0932 | .0127  |        |
| 120.000 |        |        | .5107 | .4847  | .5264  | .4969  |        | .0723  | -.1815 | -.4160 | -.1304 | -.0244 |        |
| 140.000 |        |        |       |        |        |        |        | .0439  |        |        |        |        |        |
| 150.000 |        | .7919  | .6453 | .5363  | .6077  | .9222  |        | -.1998 | -.3934 | -.2287 | -.1259 | -.0736 |        |
| 151.000 |        |        |       |        |        |        | .6514  |        |        |        |        |        |        |
| 162.000 |        |        |       |        |        |        | .7084  |        |        |        |        |        |        |
| 165.000 |        |        |       |        |        |        |        | -.2666 | -.2959 | -.2304 | -.1415 | -.0854 |        |
| 169.000 |        |        |       |        |        |        |        |        |        |        |        |        |        |
| 174.000 |        |        |       |        |        | 1.0510 |        |        |        |        |        |        |        |
| 180.000 | 1.4040 | 1.0082 | .7333 | .5292  | .6054  | .9081  |        | -.3739 | -.3726 | -.1816 | -.1659 | -.0967 |        |
| X/LB    | .6520  | .7290  | .7790 | .8790  | .9210  | .9600  | 1.0180 | 1.0460 |        |        |        |        |        |

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[illegible]

## PARAMETRIC DATA

|          |         |          |       |
|----------|---------|----------|-------|
| RUDDER = | .000    | SPDRK =  | .000  |
| BOFLAP = | -11.700 | L-ELVN = | .000  |
| R-FLVN = | .000    | MACH =   | 1.250 |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB19)

ALPHA ( 1 ) = -3.974 BETA ( 2 ) = .192 MACH = 1.2478 Q = 600.12 P = 550.64 RN/L = 3.0180

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |       |       |        |        |        |        |        |        |        |        |        |        |        |
| .000    | 1.4094 | .6294 | .1976 | .0551 | .0236  |        |        | -.0072 | .0027  | -.0088 | -.0529 | -.0743 | -.0947 | -.0538 |        |
| 20.000  |        |       | .2157 | .0661 | -.0050 | -.0377 |        | -.0152 | -.0377 | -.1455 | -.1369 | -.1205 | -.0845 | -.0914 | -.0569 |
| 40.000  |        |       | .3564 | .0900 | .0262  | -.0333 |        | -.0462 | -.0190 |        |        |        |        |        |        |
| 55.000  |        |       | .4767 | .2180 | .1540  | .0678  |        | .0576  | -.0190 |        |        |        |        |        |        |
| 70.000  |        |       | .5571 | .2983 | .2272  | .1761  |        | .1269  | -.0842 | -.3344 | -.2047 | -.1170 | -.0027 |        |        |
| 90.000  | .7818  |       | .6229 | .3656 | .2701  | .2274  |        | .1661  | -.0842 | -.3189 | -.3164 | -.1243 | -.0081 |        |        |
| 120.000 |        |       | .7074 | .5171 | .3824  | .4466  |        | .3941  | -.0417 | -.2745 | -.4916 | -.1681 | -.0386 |        |        |
| 140.000 |        |       |       |       |        |        |        |        | -.1610 |        |        |        |        |        |        |
| 150.000 |        |       | .7408 | .6116 | .4960  | .5693  |        | .8524  | -.2807 | -.3654 | -.2481 | -.1618 | -.0607 |        |        |
| 162.000 |        |       |       |       |        |        |        |        | .5663  |        |        |        |        |        |        |
| 165.000 |        |       |       |       |        |        |        |        | .6438  |        |        |        |        |        |        |
| 169.000 |        |       |       |       |        |        |        |        |        | -.2729 | -.3471 | -.1720 | -.1703 | -.0656 |        |
| 174.000 |        |       |       |       |        |        |        |        |        | -.3459 | -.4055 | -.1502 | -.1654 | -.0666 |        |
| 180.000 | 1.4094 | .9941 | .7384 | .6168 | .5318  | .6119  | 1.0416 | .9401  |        |        |        |        |        |        |        |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |        |

PHI

|         |        |        |        |        |        |        |        |        |        |        |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|--|--|--|--|
| .000    | .0020  | -.0261 | -.0517 | -.1171 | -.1962 | -.2483 | -.3136 |        |        |        |  |  |  |  |  |
| 40.000  | -.0417 | -.0666 | -.1125 | -.2001 | -.2001 | -.2001 | -.3498 |        | -.5483 | -.5628 |  |  |  |  |  |
| 70.000  | .0706  | -.0091 | .1089  | .2928  | .1033  | .0045  | -.0251 |        | -.4944 | -.3880 |  |  |  |  |  |
| 90.000  | .0772  | .0389  | .2200  | .2615  | .0485  | -.0297 | -.0381 |        |        |        |  |  |  |  |  |
| 105.000 |        |        | .3251  | .2374  | -.0214 | -.0824 | -.1101 |        |        |        |  |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        | -.2591 |        |        |  |  |  |  |  |
| 120.000 | .0691  | .1051  | .3621  | .4401  | -.0533 | -.1226 | -.1561 | -.2398 |        |        |  |  |  |  |  |
| 140.000 |        |        | .4405  | .4509  | .0135  | -.0207 | -.0553 |        |        |        |  |  |  |  |  |
| 150.000 | .0413  | .1254  | .4711  | .4745  | .1173  | .0441  | -.0308 |        |        |        |  |  |  |  |  |
| 155.000 | .0335  |        | .4767  |        | .3507  | .1170  | -.3137 |        |        |        |  |  |  |  |  |
| 180.000 | .0254  | .1224  | .4806  | .5879  |        |        |        |        |        |        |  |  |  |  |  |

ALPHA ( 1 ) = -3.984 BETA ( 3 ) = 4.293 MACH = 1.2478 Q = 600.12 P = 550.64 RN/L = 3.0180

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |       |       |        |        |       |        |        |        |        |        |        |        |        |
| .000    | 1.3955 | .6209 | .2004 | .0501 | .0326  |        |       | -.0346 | -.0081 | -.0112 | -.0498 | -.0694 | -.0971 | -.0703 |        |
| 20.000  |        |       | .2016 | .0506 | -.0033 | -.0436 |       | -.0121 | -.0252 | -.0879 | -.0929 | -.1054 | -.0744 | -.0860 | -.0452 |
| 40.000  |        |       | .3014 | .0513 | .0156  | -.0367 |       | -.0261 | -.0879 | -.0493 |        |        |        |        |        |
| 55.000  |        |       | .3915 | .1422 | .0828  | .0139  |       | .0261  | -.0493 |        |        |        |        |        |        |
| 70.000  |        |       | .4567 | .1928 | .1301  | .0866  |       | .0668  | -.0445 | -.3944 | -.2460 | -.1350 | -.0173 |        |        |
| 90.000  | .6361  |       | .5177 | .2598 | .1822  | .1232  |       | .0854  | -.1813 | -.3903 | -.3672 | -.1257 | -.0185 |        |        |
| 120.000 |        |       | .6116 | .4186 | .2738  | .3388  |       | .2796  | -.1556 | -.3439 | -.5501 | -.2576 | -.0517 |        |        |

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ORIGINAL PAGE IS POOR



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TABULATED PRESSURE DATA - OA148 ( AMES 11-073-1 )

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(XEBB19)

AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = -.051 BETA ( 1 ) = -3.861

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660 | .1770  | .2340  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|-------|-------|
| PHI     |        |        |        |        |        |        |        |       |        |        |        |        |        |       |       |
| 180.000 | 1.4130 | .8814  | .6083  | .5005  | .3985  | .5123  |        | .8677 | -.4228 | -.4262 | -.3450 | -.2077 | -.0784 |       |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |        |        |        |       |       |
| PHI     |        |        |        |        |        |        |        |       |        |        |        |        |        |       |       |
| .000    | .0212  | .0167  | .0082  | -.0514 | -.1201 | -.1794 | -.2556 |       | -.5108 | -.5295 |        |        |        |       |       |
| 40.000  | -.0186 | -.0110 | -.0110 | -.0485 | -.1373 | -.1045 | -.2948 |       | -.5022 | -.3520 |        |        |        |       |       |
| 70.000  | .0101  | -.1054 | -.1718 | .1693  | .0722  | -.0292 | -.0170 |       |        |        |        |        |        |       |       |
| 90.000  | .0330  | -.0384 | -.0510 | .1512  | .0475  | -.0504 | -.0792 |       |        |        |        |        |        |       |       |
| 105.000 |        |        | .1605  | .1864  | -.0224 | -.1191 | -.1592 |       |        |        |        |        |        |       |       |
| 110.000 |        |        |        |        |        |        |        |       |        |        |        |        |        |       |       |
| 120.000 | -.0034 | -.0156 | .3306  | .2185  | -.0476 | -.1253 | -.1230 |       |        |        |        |        |        |       |       |
| 135.000 |        |        | .3898  | .3675  | -.0226 | -.0328 | -.0443 |       |        |        |        |        |        |       |       |
| 150.000 | .0056  | .0425  | .3753  | .3697  | .0540  | .0638  | -.0106 |       |        |        |        |        |        |       |       |
| 165.000 | .0025  |        | .3666  |        | .3659  | .1644  | -.2926 |       |        |        |        |        |        |       |       |
| 180.000 | -.0010 | .0993  | .3521  | .3705  |        |        |        |       |        |        |        |        |        |       |       |

ALPHA ( 2 ) = -.007 BETA ( 2 ) = .182 MACH = 1.2471 Q = 599.71 P = 550.87 RV/L = 3.0179

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460  | .0700  | .1120  | .1580  | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |       |        |        |        |        |       |        |        |        |        |        |        |        |
| .000    | 1.4168 | .7635 | .3067 | .1562  | .1049  | .0170  |        | .0224 | .0363  | .0332  | -.0033 | -.0293 | -.0594 | -.0531 |        |
| 20.000  |        |       | .3251 | .1557  | .0812  | .0455  |        | .0273 | .0027  | -.0303 | -.0448 | -.0509 | -.0290 | -.0706 | -.0296 |
| 40.000  |        |       | .4497 | .2000  | .1237  | .1201  |        | .0486 |        |        |        |        |        |        |        |
| 55.000  |        |       | .5325 | .2867  | .2107  | .1201  |        | .1345 | .0521  |        |        |        |        |        |        |
| 70.000  |        |       | .5756 | .3218  | .2294  | .1827  |        | .1707 | .0672  | -.3059 | -.1754 | -.1396 | -.0402 |        |        |
| 90.000  |        | .7554 | .6128 | .3662  | .2379  | .2301  |        | .2085 | -.0188 | -.3023 | -.2711 | -.1645 | -.0458 |        |        |
| 120.000 |        |       | .6505 | .4569  | .3119  | .4042  |        | .4186 | -.0219 | -.2717 | -.4761 | -.1605 | -.0592 |        |        |
| 140.000 |        |       |       |        |        |        |        |       | -.1096 |        |        |        |        |        |        |
| 150.000 |        |       | .6393 | .5100  | .3735  | .4926  |        | .8252 | -.3195 | -.4647 | -.3150 | -.1819 | -.0578 |        |        |
| 151.000 |        |       |       |        |        |        |        |       | .5311  |        |        |        |        |        |        |
| 162.000 |        |       |       |        |        |        |        |       | .6206  |        |        |        |        |        |        |
| 165.000 |        |       |       |        |        |        |        |       |        | -.3269 | -.3942 | -.2433 | -.2030 | -.0540 |        |
| 169.000 |        |       |       |        |        |        |        |       |        |        |        |        |        |        |        |
| 174.000 |        |       |       |        |        |        |        |       |        |        |        |        |        |        |        |
| 180.000 |        |       |       |        |        |        |        |       |        |        |        |        |        |        |        |
| X/LB    | .6520  | .7290 | .7790 | .8210  | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |        |        |        |        |        |
| PHI     |        |       |       |        |        |        |        |       |        |        |        |        |        |        |        |
| .000    | .0191  | .0241 | .0118 | -.0423 | -.1186 | -.1747 | -.2550 |       | -.5084 | -.5267 |        |        |        |        |        |
| 40.000  | .0047  |       | .0099 | -.0339 | -.1294 | -.1215 | -.2659 |       | -.4711 | -.3623 |        |        |        |        |        |

(61883X)

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TABULATED PRESSURE DATA - OA148 ( AMES 11-073-1 )  
AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

$$\text{BETA (1)} = -.007 \quad \text{BETA (2)} = .182$$

| SECTION (ORBITER FUSELAGE) | DEPENDENT VARIABLE CP |      |      |
|----------------------------|-----------------------|------|------|
| 0000                       | 0210                  | 0700 | 0600 |
| 0001                       | 0210                  | 0700 | 0600 |
| 0002                       | 0210                  | 0700 | 0600 |
| 0003                       | 0210                  | 0700 | 0600 |
| 0004                       | 0210                  | 0700 | 0600 |
| 0005                       | 0210                  | 0700 | 0600 |
| 0006                       | 0210                  | 0700 | 0600 |
| 0007                       | 0210                  | 0700 | 0600 |
| 0008                       | 0210                  | 0700 | 0600 |
| 0009                       | 0210                  | 0700 | 0600 |
| 0010                       | 0210                  | 0700 | 0600 |
| 0011                       | 0210                  | 0700 | 0600 |
| 0012                       | 0210                  | 0700 | 0600 |
| 0013                       | 0210                  | 0700 | 0600 |
| 0014                       | 0210                  | 0700 | 0600 |
| 0015                       | 0210                  | 0700 | 0600 |
| 0016                       | 0210                  | 0700 | 0600 |
| 0017                       | 0210                  | 0700 | 0600 |
| 0018                       | 0210                  | 0700 | 0600 |
| 0019                       | 0210                  | 0700 | 0600 |
| 0020                       | 0210                  | 0700 | 0600 |
| 0021                       | 0210                  | 0700 | 0600 |
| 0022                       | 0210                  | 0700 | 0600 |
| 0023                       | 0210                  | 0700 | 0600 |
| 0024                       | 0210                  | 0700 | 0600 |
| 0025                       | 0210                  | 0700 | 0600 |
| 0026                       | 0210                  | 0700 | 0600 |
| 0027                       | 0210                  | 0700 | 0600 |
| 0028                       | 0210                  | 0700 | 0600 |
| 0029                       | 0210                  | 0700 | 0600 |
| 0030                       | 0210                  | 0700 | 0600 |
| 0031                       | 0210                  | 0700 | 0600 |
| 0032                       | 0210                  | 0700 | 0600 |
| 0033                       | 0210                  | 0700 | 0600 |
| 0034                       | 0210                  | 0700 | 0600 |
| 0035                       | 0210                  | 0700 | 0600 |
| 0036                       | 0210                  | 0700 | 0600 |
| 0037                       | 0210                  | 0700 | 0600 |
| 0038                       | 0210                  | 0700 | 0600 |
| 0039                       | 0210                  | 0700 | 0600 |
| 0040                       | 0210                  | 0700 | 0600 |
| 0041                       | 0210                  | 0700 | 0600 |
| 0042                       | 0210                  | 0700 | 0600 |
| 0043                       | 0210                  | 0700 | 0600 |
| 0044                       | 0210                  | 0700 | 0600 |
| 0045                       | 0210                  | 0700 | 0600 |
| 0046                       | 0210                  | 0700 | 0600 |
| 0047                       | 0210                  | 0700 | 0600 |
| 0048                       | 0210                  | 0700 | 0600 |
| 0049                       | 0210                  | 0700 | 0600 |
| 0050                       | 0210                  | 0700 | 0600 |
| 0051                       | 0210                  | 0700 | 0600 |
| 0052                       | 0210                  | 0700 | 0600 |
| 0053                       | 0210                  | 0700 | 0600 |
| 0054                       | 0210                  | 0700 | 0600 |
| 0055                       | 0210                  | 0700 | 0600 |
| 0056                       | 0210                  | 0700 | 0600 |
| 0057                       | 0210                  | 0700 | 0600 |
| 0058                       | 0210                  | 0700 | 0600 |
| 0059                       | 0210                  | 0700 | 0600 |
| 0060                       | 0210                  | 0700 | 0600 |
| 0061                       | 0210                  | 0700 | 0600 |
| 0062                       | 0210                  | 0700 | 0600 |
| 0063                       | 0210                  | 0700 | 0600 |
| 0064                       | 0210                  | 0700 | 0600 |
| 0065                       | 0210                  | 0700 | 0600 |
| 0066                       | 0210                  | 0700 | 0600 |
| 0067                       | 0210                  | 0700 | 0600 |
| 0068                       | 0210                  | 0700 | 0600 |
| 0069                       | 0210                  | 0700 | 0600 |
| 0070                       | 0210                  | 0700 | 0600 |
| 0071                       | 0210                  | 0700 | 0600 |
| 0072                       | 0210                  | 0700 | 0600 |
| 0073                       | 0210                  | 0700 | 0600 |
| 0074                       | 0210                  | 0700 | 0600 |
| 0075                       | 0210                  | 0700 | 0600 |
| 0076                       | 0210                  | 0700 | 0600 |
| 0077                       | 0210                  | 0700 | 0600 |
| 0078                       | 0210                  | 0700 | 0600 |
| 0079                       | 0210                  | 0700 | 0600 |
| 0080                       | 0210                  | 0700 | 0600 |
| 0081                       | 0210                  | 0700 | 0600 |
| 0082                       | 0210                  | 0700 | 0600 |
| 0083                       | 0210                  | 0700 | 0600 |
| 0084                       | 0210                  | 0700 | 0600 |
| 0085                       | 0210                  | 0700 | 0600 |
|                            |                       |      |      |

[illegible]

|         |       |       |              |               |
|---------|-------|-------|--------------|---------------|
| 180.000 | .0134 | .0777 | .3732        | .4872         |
|         |       |       | MACH = 4.263 | Q = 1.2471    |
|         |       |       | P = 599.71   | RN/L = 530.67 |
|         |       |       |              | RN/L = 3.0179 |

| SECTION (1) ORBITER FUSELAGE | DEPENDENT VARIABLE CP |       |       |       |
|------------------------------|-----------------------|-------|-------|-------|
| 2000                         | 0.060                 | .0230 | .1120 | .1660 |
| 2001                         | 0.060                 | .0700 | .1560 | .1770 |
| 2002                         | 0.060                 | .0230 | .2040 | .2510 |
| 2003                         | 0.060                 | .0230 | .3010 | .3780 |
| 2004                         | 0.060                 | .0230 | .4970 | .5740 |

[illegible][illegible]

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073 0A148) -140A/B/C/R ORB FUSELAGE

(XEBB19)

ALPHA ( 2 ) = -.013 BETA ( 3 ) = 4.253

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|--------|-------|-------|-------|-------|--------|--------|-------|--------|--------|
| PHI     |        |       |       |       |       |        |        |       |        |        |
| 165.000 | .0022  | .3453 |       |       | .2128 | -.0111 | -.3345 |       |        |        |
| 180.000 | -.0059 | .0959 | .3552 | .3843 |       |        |        |       |        |        |

ALPHA ( 3 ) = 3.859 BETA ( 1 ) = -3.873 MACH = 1.2484 Q = 600.53 P = 550.41 RN/L = 3.0214

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1860 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |        |
| .000    | 1.4025 | .8831 | .4167 | .2737 | .1626 |       | .0809 | .0547 |        | .0475  | .0649  | .0412  | .0321  | -.0110 | -.0174 |
| 20.000  |        |       | .4643 | .2845 | .1590 |       | .0809 | .0651 |        | .0313  |        |        |        |        |        |
| 40.000  |        |       | .6075 | .3492 | .2246 |       | .1345 | .1034 |        | .0363  | .0289  | .0082  | .0487  | -.0188 | -.0034 |
| 55.000  |        |       | .6799 | .4302 | .3298 |       | .2215 | .2198 |        | .1505  |        |        |        |        |        |
| 70.000  |        |       | .6823 | .4496 | .3286 |       | .2551 | .2461 |        | .1676  | -.2193 | -.0797 | -.0747 | -.1060 |        |
| 90.000  |        | .8614 | .6918 | .4650 | .3274 |       | .2874 | .2940 |        | .1233  | -.2162 | -.1337 | -.1280 | -.1019 |        |
| 120.000 |        |       | .6518 | .4682 | .3196 |       | .1758 | .5091 |        | .0983  | -.1983 | -.4071 | -.2732 | -.1744 |        |
| 140.000 |        |       |       |       |       |       |       |       |        | .0248  |        |        |        |        |        |
| 150.000 |        |       | .5675 | .4349 | .2689 | .1108 |       | .8793 |        | -.2372 | -.5095 | -.3980 | -.1946 | -.1039 |        |
| 151.000 |        |       |       |       |       |       |       | .6163 |        |        |        |        |        |        |        |
| 162.000 |        |       |       |       |       |       |       | .6499 |        |        |        |        |        |        |        |
| 165.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |        |
| 169.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |        |
| 174.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |        |
| 180.000 | 1.4025 | .7454 | .4879 | .4001 | .2706 | .4103 | .9528 | .9119 |        | -.3721 | -.4663 | -.3595 | -.2041 | -.0822 |        |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |        |

## PHI

| PHI     | .000   | 40.000 | 70.000 | 90.000 | 105.000 | 110.000 | 120.000 | 135.000 | 150.000 | 155.000 | 160.000 | 180.000 |
|---------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|
| .000    | .0403  | .0713  | .0862  | .0345  | -.0414  | -.1042  | -.1923  |         |         |         |         |         |
| 40.000  | .0538  | .0722  | .0722  | .0362  | -.0601  | -.0390  | -.1997  |         |         |         |         |         |
| 70.000  | -.0611 | -.1888 | -.2509 | -.0228 | -.0093  | -.0940  | -.0550  |         |         |         |         |         |
| 90.000  | -.0285 | -.1351 | -.1928 | .0510  | -.0364  | -.1169  | -.1545  |         |         |         |         |         |
| 105.000 |        |        | .0088  | .1163  | -.1438  | -.1766  | -.2264  |         |         |         |         |         |
| 110.000 |        |        |        |        |         |         |         |         |         |         |         |         |
| 120.000 | -.0865 | -.0956 | .2311  | .1488  | -.0884  | -.2231  | -.1876  |         |         |         |         |         |
| 135.000 |        |        | .2623  | .2586  | -.0800  | -.1273  | -.1296  |         |         |         |         |         |
| 150.000 | -.0176 | .0571  | .2635  | .2662  | -.0429  | .0036   | -.0853  |         |         |         |         |         |
| 155.000 | -.0089 |        | .2710  |        | .2676   | .1198   | -.2869  |         |         |         |         |         |
| 180.000 | -.0079 | .1005  | .2550  | .3148  |         |         |         |         |         |         |         |         |

1.0460

-.4755  
-.4610-.2662  
-.2748

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE9819)

ALPHA ( 3 ) = 3.906 BETA ( 2 ) = .178 MACH = 1.2484 Q = 600.53 P = 550.41 RN/L = 3.0214

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000   | .000  | .000  | .000  | .000  | .000  | .000  | .000   | .000   | .000   | .000   | .000   | .000   | .000   | .000  |
| 20.000  | 1.4065 | .8906 | .4212 | .2836 | .1854 | .0827 | .0561 | .0724  | .0785  | .0521  | .0273  | .0056  | -.0056 | -.0106 |       |
| 40.000  |        |       | .4374 | .2732 | .1561 | .0827 | .0622 | .0955  | .0460  | .0169  | .0297  | -.0224 | -.0072 |        |       |
| 55.000  |        |       | .5363 | .3056 | .2039 | .1102 | .1087 | .0596  |        |        |        |        |        |        |       |
| 70.000  |        |       | .5759 | .3463 | .2479 | .1442 | .1770 | .1084  |        |        |        |        |        |        |       |
| 90.000  |        | .7193 | .5804 | .3449 | .2380 | .1645 | .1937 | .1155  | -.2634 | -.1508 | -.1336 | -.1104 |        |        |       |
| 120.000 |        |       | .5887 | .3596 | .2297 | .1850 | .2372 | .0465  | -.2722 | -.2089 | -.1876 | -.1011 |        |        |       |
| 140.000 |        |       | .5790 | .4005 | .2415 | .3054 | .4381 | .0053  | -.2682 | -.4607 | -.2186 | -.1092 |        |        |       |
| 150.000 |        |       | .5356 | .4232 | .2495 | .3961 | .7933 | -.0632 | -.5119 | -.3689 | -.1876 | -.0569 |        |        |       |
| 162.000 |        |       |       |       |       |       |       | .5380  |        |        |        |        |        |        |       |
| 165.000 |        |       |       |       |       |       |       | .5961  |        |        |        |        |        |        |       |
| 169.000 |        |       |       |       |       |       |       |        | -.3684 | -.4374 | -.2931 | -.2138 | -.0479 |        |       |
| 174.000 |        |       |       |       |       |       |       |        |        |        |        |        |        |        |       |
| 180.000 | 1.4065 | .7291 | .5046 | .4055 | .2869 | .4221 | .9362 | .8632  | -.5114 | -.5120 | -.2633 | -.2240 | -.0436 |        |       |

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

## PHI

|         |        |        |        |       |        |        |        |        |        |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|
| .000    | .0360  | .0823  | .0976  | .0383 | -.0373 | -.0991 | -.2003 | -.4698 | -.4902 |
| 40.000  | .0608  |        | .0983  | .0539 | -.0531 | -.0629 | -.1845 | -.4446 | -.3273 |
| 70.000  | -.0715 | -.1867 | -.2487 | .0058 | -.0591 | -.1379 | -.1080 |        |        |
| 90.000  | -.0271 | -.1334 | -.0607 | .0316 | -.1032 | -.1525 | -.1894 |        |        |
| 105.000 |        |        | .1188  | .0661 | -.2037 | -.2121 | -.2440 |        |        |
| 110.000 |        |        |        |       |        |        |        | -.3942 |        |
| 120.000 | -.0158 | -.0335 | .2163  | .1034 | -.1108 | -.2559 | -.2544 | -.3095 |        |
| 135.000 |        |        | .2283  | .2941 | -.0377 | -.1459 | -.1940 |        |        |
| 150.000 | .0102  | .0339  | .2432  | .4061 | .0261  | -.0682 | -.1535 |        |        |
| 165.000 | .0093  |        | .2550  |       | .2309  | .0100  | -.3105 |        |        |
| 180.000 | .0079  | .0353  | .2758  | .4626 |        |        |        |        |        |

ALPHA ( 3 ) = 3.928 BETA ( 3 ) = .4253 MACH = 1.2484 Q = 600.53 P = 550.41 RN/L = 3.0214

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|-------|
| PHI     | .000   | .000  | .000  | .000  | .000  | .000  | .000  | .000   | .000   | .000   | .000   | .000   | .000   | .000  | .000  |
| 20.000  | 1.3949 | .8790 | .4143 | .2794 | .1864 | .0541 | .0407 | .0448  | .0606  | .0554  | .0282  | -.0114 | -.0219 |       |       |
| 40.000  |        |       | .4065 | .2572 | .1473 | .0662 | .0358 | .0398  | .0429  | .0089  | .0075  | -.0422 | -.0304 |       |       |
| 55.000  |        |       | .4526 | .2567 | .1741 | .0822 | .0721 | .0394  |        |        |        |        |        |       |       |
| 70.000  |        |       | .4672 | .2519 | .1809 | .0653 | .1297 | .0663  |        |        |        |        |        |       |       |
| 90.000  |        | .5733 | .4722 | .2413 | .1599 | .0785 | .1380 | .0818  | -.3092 | -.2056 | -.1852 | -.1095 |        |       |       |
| 120.000 |        |       | .4891 | .2590 | .1473 | .0837 | .1732 | -.0341 | -.3323 | -.2686 | -.2203 | -.0933 |        |       |       |
|         |        |       | .5014 | .3267 | .1672 | .2201 | .3415 | -.0963 | -.3473 | -.5143 | -.1710 | -.0684 |        |       |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -14CA/B/C/R ORB FUSELAGE

(XE8819)

ALPHA ( 3 ) = 3.928 BETA ( 3 ) = 4.253

SECTION ( 1 ) ORBITTER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1860 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1860 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 105.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 110.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 135.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1860 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 105.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 110.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 135.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1860 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 105.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 110.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 135.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

ALPHA ( 4 ) = 7.851 BETA ( 1 ) = -3.877 MACH = 1.2474 Q = 600.07 P = 550.87 RN/L = 3.0223

SECTION ( 1 ) ORBITTER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1860 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 20.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 55.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

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ORIGINAL PAGE IS POOR

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 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8819)

ALPHA ( 4 ) = 7.851 BETA ( 1 ) = -3.877

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1680 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |        |        |        |        |        |       |        |        |        |        |        |        |       |
| 180.000 | 1.3716 | .6082  | .3737  | .3224  | .1786  | .2329  |        | .7862 |        | -.5137 | -.5005 | -.3221 | -.2224 | -.0653 |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |        |        |        |        |        |        |       |        |        |        |        |        |        |       |
| 40.000  | .1084  | .1399  | .1789  | .1301  | .0508  | -.0233 | -.1371 |       | -.4432 | -.4631 |        |        |        |        |       |
| 70.000  | .1361  | .1737  | .1737  | .1332  | .0309  | .0122  | -.1368 |       | -.4200 | -.3000 |        |        |        |        |       |
| 90.000  | -.1357 | -.2550 | -.3222 | -.1421 | -.0828 | -.1247 | -.0395 |       |        |        |        |        |        |        |       |
| 105.000 | -.0927 | -.1983 | -.2733 | -.0190 | -.1647 | -.1656 | -.1283 |       |        |        |        |        |        |        |       |
| 120.000 |        |        | -.0619 | .0452  | -.2115 | -.2915 | -.2055 |       |        |        |        |        |        |        |       |
| 135.000 | -.1728 | -.1596 | .1111  | .0781  | -.1115 | -.2433 | -.2773 |       |        |        |        |        |        |        |       |
| 150.000 | -.0752 | -.0286 | .0969  | .1742  | -.0828 | -.1477 | -.1740 |       |        |        |        |        |        |        |       |
| 165.000 | -.0412 |        | .1241  | .2108  | .0244  | -.0472 | -.1477 |       |        |        |        |        |        |        |       |
| 180.000 | -.0329 | .0004  | .1858  | .4195  | .2540  | .0773  | -.3125 |       |        |        |        |        |        |        |       |

ALPHA ( 4 ) = 7.971 BETA ( 2 ) = .182 MACH = 1.2474 Q = 800.07 P = 550.87 RN/L = 3.6323

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120  | .1580  | .1650 | .1770  | .2040  | .2510 | .3010  | .3780  | .4970  | .5740  |
|---------|--------|--------|-------|-------|-------|--------|--------|-------|--------|--------|-------|--------|--------|--------|--------|
| PHI     |        |        |       |       |       |        |        |       |        |        |       |        |        |        |        |
| 20.000  | 1.3728 | 1.0064 | .5397 | .3850 | .2699 | .1433  |        | .1139 |        | .1050  | .1024 | .1033  | .0879  | .0523  | .0505  |
| 40.000  |        |        | .5578 | .3783 | .2396 | .1843  |        | .1179 |        | .0893  |       | .1033  | .0831  | .0374  | .0501  |
| 60.000  |        |        | .6138 | .3939 | .2755 | .1843  |        | .1462 |        | .1300  |       | .1138  |        |        |        |
| 80.000  |        |        | .5047 | .3767 | .2744 | .1592  |        | .1597 |        | .1450  |       | .1367  | -.1284 | -.2007 |        |
| 100.000 |        |        | .5692 | .3480 | .2375 | .1524  |        | .1942 |        | .0947  |       | -.2193 | -.1732 | -.1865 | -.1744 |
| 120.000 |        | .6664  | .5495 | .3378 | .2188 | .1502  |        | .2400 |        | .0247  |       | -.2500 | -.1732 | -.1687 |        |
| 140.000 |        |        | .4978 | .3329 | .1941 | .1927  |        | .4403 |        | -.0761 |       | -.2705 | -.4516 | -.3582 |        |
| 160.000 |        |        | .4283 | .3336 | .1620 | .2154  |        | .7667 |        | -.3318 |       | -.5957 | -.4227 | -.1948 | -.0717 |
| 180.000 |        |        |       |       |       |        |        |       | .5251  |        |       |        |        |        |        |
| PHI     |        |        |       |       |       |        |        |       | .5695  |        |       |        |        |        |        |
| 40.000  |        |        |       |       |       |        |        |       |        | -.4116 |       | -.4826 | -.3334 | -.2057 | -.0511 |
| 60.000  |        |        |       |       |       |        |        |       |        |        |       |        |        |        |        |
| 80.000  |        |        |       |       |       |        |        |       |        |        |       |        |        |        |        |
| 100.000 |        |        |       |       |       |        |        |       |        |        |       |        |        |        |        |
| 120.000 |        |        |       |       |       |        |        |       |        |        |       |        |        |        |        |
| 140.000 |        |        |       |       |       |        |        |       |        |        |       |        |        |        |        |
| 160.000 |        |        |       |       |       |        |        |       |        |        |       |        |        |        |        |
| 180.000 |        |        |       |       |       |        |        |       |        |        |       |        |        |        |        |
| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790 | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |       |        |        |        |        |
| PHI     |        |        |       |       |       |        |        |       |        |        |       |        |        |        |        |
| 40.000  | .0869  | .1462  | .1900 | .1283 | .0485 | -.0229 | -.1410 |       | -.4443 | -.4675 |       |        |        |        |        |
| 60.000  | .1165  |        | .2039 | .1427 | .0286 | .0032  | -.1363 |       | -.4156 | -.3022 |       |        |        |        |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB19)

ALPHA ( 4 ) = 7.971 BETA ( 2 ) = .182

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0440 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| 70.000  | -.1348 | -.2534 | -.3170 | -.0990 | -.1119 | -.1869 | -.1250 |        |        |        |
| 90.000  | -.0745 | -.1917 | -.2588 | -.0157 | -.2261 | -.2021 | -.2293 |        |        |        |
| 105.000 |        |        | -.0310 | .0574  | -.2905 | -.3142 | -.2845 |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.3720 |        |        |
| 120.000 | -.0672 | -.0890 | .1096  | .0387  | -.1590 | -.2893 | -.3624 | -.3232 |        |        |
| 135.000 |        |        | .1165  | .2334  | -.0846 | -.1947 | -.2457 |        |        |        |
| 150.000 | -.0164 | -.0336 | .1612  | .4456  | -.0203 | -.1240 | -.1938 |        |        |        |
| 165.000 | -.0133 | .1959  | .1959  | .1757  | -.0570 | -.3220 |        |        |        |        |
| 180.000 | -.0121 | -.0015 | .2281  | .5049  |        |        |        |        |        |        |

ALPHA ( 4 ) = 7.972 BETA ( 3 ) = 4.253 M.CH = 1.2474 Q = 600.07 P = 550.87 RN/L = 3.0223

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 20.000  | 1.3592 | .9950 | .5336 | .3859 | .2625 | .1181 |       | .1023 | .0887  | .0880  | .0892  | .1019  | .0880  | .0469  | .0422 |
| 40.000  |        |       | .5171 | .3510 | .2204 | .1228 |       | .0864 | .0680  | .0573  | .0809  | .0599  | .0573  | .0071  | .0271 |
| 55.000  |        |       | .5212 | .3337 | .2291 | .1257 |       | .0973 | .0573  | .0966  | .1016  | .1869  | -.1852 | -.2094 |       |
| 70.000  |        |       | .4843 | .2764 | .1955 | .0657 |       | .0704 | .1016  | .0266  | -.2587 | -.2288 | -.2359 | -.1657 |       |
| 90.000  |        | .5219 | .4576 | .2433 | .1574 | .0678 |       | .1818 | .0266  | -.0582 | -.3337 | -.4938 | -.2262 | -.0970 |       |
| 120.000 |        |       | .4538 | .2440 | .1401 | .0668 |       | .3643 | -.0582 | -.1872 |        |        |        |        |       |
| 140.000 |        |       | .4314 | .2708 | .1345 | .1301 |       |       | -.4144 | -.5594 | -.3615 | -.1921 | -.0520 |        |       |
| 150.000 |        |       | .3940 | .3117 | .1262 | .1773 |       | .7009 | .4353  |        |        |        |        |        |       |
| 162.000 |        |       |       |       |       |       |       |       | .4965  |        |        |        |        |        |       |
| 165.000 |        |       |       |       |       |       |       | .8003 |        | -.4211 | -.5368 | -.3076 | -.2257 | -.0463 |       |
| 169.000 |        |       |       |       |       |       |       | .8180 |        |        |        |        |        |        |       |
| 174.000 |        |       |       |       |       |       |       |       |        | -.5318 | -.4916 | -.3151 | -.2309 | -.0661 |       |
| 180.000 | 1.3592 | .5691 | .3856 | .3311 | .1726 | .2090 | .8328 | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |

X/LB

PHI

|         |        |        |        |        |        |        |        |        |  |  |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--|--|--|--|--|--|--|
| 20.000  | .0779  | .1461  | .1799  | .1264  | .0459  | -.0305 | -.1474 |        |  |  |  |  |  |  |  |
| 40.000  | .0977  | .2037  | .2037  | .1405  | .0277  | -.0137 | -.1434 |        |  |  |  |  |  |  |  |
| 70.000  | -.1211 | -.2879 | -.3152 | -.0974 | -.1462 | -.2463 | -.1863 |        |  |  |  |  |  |  |  |
| 90.000  | -.0500 | -.1837 | -.1351 | -.0439 | -.2273 | -.1966 | -.2828 |        |  |  |  |  |  |  |  |
| 105.000 |        |        | .0142  | -.0091 | -.5351 | -.3101 | -.3217 |        |  |  |  |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        | -.4236 |  |  |  |  |  |  |  |
| 120.000 | -.0146 | -.0678 | .0893  | -.0949 | -.2148 | -.3576 | -.4579 | -.3553 |  |  |  |  |  |  |  |
| 125.000 |        |        | .1917  | .2387  | -.1476 | -.2399 | -.2894 |        |  |  |  |  |  |  |  |
| 150.000 | -.0107 | -.0062 | .2327  | .3354  | -.0927 | -.2026 | -.2589 |        |  |  |  |  |  |  |  |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8819)

ALPHA ( 4 ) = 7.972 BETA ( 3 ) = 4.253

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 -.0232 .1784 .1187 -.1326 -.3373

180.000 -.0405 .1570 .3954

ALPHA ( 5 ) = 11.905 BETA ( 1 ) = -3.844 MACH = 1.2483 Q = 600.41 P = 550.41 RN/L = 3.0228

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.3171 1.1122 .6635 .4844 .3584 .2335 .1933 .1615 .1446 .1400 .1651 .1279 .1368

20.000 .7061 .7766 .7316 .5077 .3548 .2335 .2016 .1563 .1672 .1604 .1826 .1305 .1600

40.000 .7766 .7316 .5077 .3548 .2335 .2016 .1563 .1672 .1604 .1826 .1305 .1600

55.000 .7316 .5077 .3548 .2335 .2016 .1563 .1672 .1604 .1826 .1305 .1600

70.000 .6604 .4476 .3168 .2391 .1898 .1941 -.1673 -.1214 -.0488 -.0525 -.1476

90.000 .6028 .4031 .2801 .2018 .1898 .1941 -.1673 -.1214 -.0488 -.0525 -.1476

120.000 .4752 .2969 .1779 .1756 .1756 .1756 .1258 -.2023 -.3790 -.5533 -.4317

140.000 .3369 .2304 .1143 .1388 .1388 .1388 .0339 -.5912 -.5292 -.2699 -.1531

150.000 .3369 .2304 .1143 .1388 .1388 .1388 .0339 -.5912 -.5292 -.2699 -.1531

160.000 .3369 .2304 .1143 .1388 .1388 .1388 .0339 -.5912 -.5292 -.2699 -.1531

165.000 .3369 .2304 .1143 .1388 .1388 .1388 .0339 -.5912 -.5292 -.2699 -.1531

169.000 .3369 .2304 .1143 .1388 .1388 .1388 .0339 -.5912 -.5292 -.2699 -.1531

174.000 .3369 .2304 .1143 .1388 .1388 .1388 .0339 -.5912 -.5292 -.2699 -.1531

180.000 1.3171 .4626 .2510 .2295 .1055 .1246 .7829 .6492 .5447 .5302 .3362 .2044 .0598

X/LB

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .1902 .2714 .2908 .2128 .1234 .0336 -.0935

40.000 .2254 .3191 .3191 .2256 .0930 .0645 -.0945

70.000 .2508 .3786 .4085 .2059 .1149 .1242 .1031

90.000 .1649 .2822 .3551 .0862 .2253 .1173 .1752

105.000 .2822 .2822 .2822 .0194 .2582 .2513 .2097

110.000 .2822 .2822 .2822 .0194 .2582 .2513 .2097

120.000 .1927 .2028 .0045 .0540 .1729 .2633 .2484

135.000 .1713 .0037 .1713 .1713 .1369 .1778 .2028

150.000 .1044 .2064 .0435 .3783 .0745 .1687 .2546

165.000 .0659 .0458 .0458 .0458 .1207 .0200 .3330

180.000 .0506 .0484 .0749 .5544

-.4191 -.4412

-.4033 -.2789

-.3323

-.2814

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB19)

ALPHA ( 5 ) = 11.915 BETA ( 2 ) = .187 MACH = 1.2483 O = 600.41 P = 550.41 RV/L = 3.0228

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|
| PHI     |        |        |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 20.000  | 1.3249 | 1.1195 | .6682 | .4945 | .3700 | .2244 |       | .2031 | .1695  | .1345  | .1561 | .1593 | .1246 | .1394 |       |
| 40.000  |        |        | .6789 | .4854 | .3414 | .2425 |       | .1913 | .1552  | .1214  | .1529 | .1444 | .1085 | .1361 |       |
| 55.000  |        |        | .6884 | .4804 | .3610 | .2425 |       | .1980 | .1214  |        |       |       |       |       |       |
| 70.000  |        |        | .6111 | .3969 | .2927 | .1533 |       | .1168 | .1667  |        |       |       |       |       |       |
| 90.000  |        | .6097  | .5428 | .3416 | .2303 | .1550 |       | .1231 | .1343  |        |       |       |       |       |       |
| 120.000 |        |        | .5007 | .3088 | .1967 | .1243 |       | .1972 | .10503 |        |       |       |       |       |       |
| 140.000 |        |        | .4125 | .2553 | .1319 | .1342 |       | .4234 | -.0622 |        |       |       |       |       |       |
| 150.000 |        |        | .3185 | .2485 | .0998 | .1316 |       | .7462 | -.3211 |        |       |       |       |       |       |
| 162.000 |        |        |       |       |       |       |       | .5194 |        |        |       |       |       |       |       |
| 165.000 |        |        |       |       |       |       |       | .5525 |        |        |       |       |       |       |       |
| 169.000 |        |        |       |       |       |       |       |       | -.4458 |        |       |       |       |       |       |
| 174.000 |        |        |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 180.000 | 1.3249 | .4424  | .2678 | .2525 | .1173 | .1345 | .7965 | .7904 |        |        |       |       |       |       |       |
| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |

|         |        |        |        |        |        |        |        |  |  |  |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--|--|--|--|--|--|--|--|
| PHI     |        |        |        |        |        |        |        |  |  |  |  |  |  |  |  |
| 40.000  | .1851  | .3010  | .2949  | .2169  | .1260  | .0339  | -.0968 |  |  |  |  |  |  |  |  |
| 70.000  | .2024  | .3152  | .3152  | .2338  | .0992  | .0525  | -.0918 |  |  |  |  |  |  |  |  |
| 90.000  | -.2323 | -.3761 | -.4166 | -.1954 | -.2441 | -.2640 | -.1062 |  |  |  |  |  |  |  |  |
| 105.000 | -.1421 | -.2551 | -.3466 | -.1008 | -.2955 | -.2436 | -.2751 |  |  |  |  |  |  |  |  |
| 110.000 |        |        | -.1907 | .0027  | -.3458 | -.4086 | -.3008 |  |  |  |  |  |  |  |  |
| 120.000 | -.0829 | -.1297 | .0757  | -.0266 | -.2037 | -.3080 | -.3776 |  |  |  |  |  |  |  |  |
| 130.000 |        |        | .0355  | .1539  | -.1336 | -.2758 | -.2452 |  |  |  |  |  |  |  |  |
| 150.000 | -.0610 | -.0772 | .0167  | .4166  | -.0179 | .1145  | -.2702 |  |  |  |  |  |  |  |  |
| 160.000 | -.0378 |        | .0497  |        | .1040  | -.0356 | -.3332 |  |  |  |  |  |  |  |  |
| 180.000 | -.0300 | -.0778 | .0910  | .6400  |        |        |        |  |  |  |  |  |  |  |  |

ALPHA ( 5 ) = 11.907 BETA ( 3 ) = 4.269 MACH = 1.2483 O = 600.41 P = 550.41 RV/L = 3.0228

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0090  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|
| PHI     |        |        |       |       |       |       |       |       |        |       |       |       |       |       |       |
| 20.000  | 1.3121 | 1.1006 | .6555 | .4883 | .3511 | .1931 |       | .1813 | .1548  | .1355 | .1469 | .1655 | .1229 | .1252 |       |
| 40.000  |        |        | .6288 | .4449 | .3049 | .1660 |       | .1594 | .1243  |       |       |       |       |       |       |
| 55.000  |        |        | .5840 | .4013 | .2900 | .1560 |       | .1352 | .0506  |       |       |       |       |       |       |
| 70.000  |        |        | .4872 | .2803 | .1905 | .0451 |       | .0393 | .0539  |       |       |       |       |       |       |
| 90.000  |        |        | .4299 | .2260 | .1396 | .0709 |       | .0624 | .1166  |       |       |       |       |       |       |
| 120.000 |        | .4593  | .4061 | .2076 | .1249 | .0444 |       | .1605 | .0761  |       |       |       |       |       |       |
|         |        |        | .3517 | .1967 | .0929 | .0858 |       | .3750 | -.0240 |       |       |       |       |       |       |





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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB8820)

ALPHA ( 1 ) = -3.971 BETA ( 2 ) = .189 MACH = 1.1022 Q = 601.66 P = 707.48 RN/L = 3.1893

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | PHI    | .0000 | .0080 | .0230 | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 20.000  | 1.3231 | .5561 | .1423 | .0876 | .0218  | -.0120 | -.0413 | -.0105 | -.0351 | -.0834 | -.0459 | -.0846 | -.1382 | -.1253 | -.0934 | -.0267 |
| 40.000  |        |       | .1592 | .0693 | -.0120 | -.0413 | -.0329 | -.0351 | -.0351 | -.0834 | -.0459 | -.0846 | -.1382 | -.1253 | -.0934 | -.0267 |
| 60.000  |        |       | .3002 | .0802 | -.0061 | -.0329 | -.0329 | -.0351 | -.0351 | -.0834 | -.0459 | -.0846 | -.1382 | -.1253 | -.0934 | -.0267 |
| 80.000  |        |       | .4305 | .2001 | .1258  | -.0329 | -.0329 | -.0351 | -.0351 | -.0834 | -.0459 | -.0846 | -.1382 | -.1253 | -.0934 | -.0267 |
| 100.000 |        |       | .5178 | .2851 | .2091  | .1632  | -.0461 | -.0461 | -.0461 | -.0858 | -.0858 | -.0858 | -.0858 | -.0858 | -.0858 | -.0858 |
| 120.000 |        | .7416 | .5918 | .3552 | .2696  | .2045  | .0760  | .0760  | .0760  | -.1970 | -.1970 | -.1970 | -.1970 | -.1970 | -.1970 | -.1970 |
| 140.000 |        |       | .6850 | .5051 | .3869  | .4130  | .2975  | .2975  | .2975  | -.1547 | -.1547 | -.1547 | -.1547 | -.1547 | -.1547 | -.1547 |
| 160.000 |        |       | .7290 | .6077 | .5070  | .5361  | .7630  | .7630  | .7630  | -.2296 | -.2296 | -.2296 | -.2296 | -.2296 | -.2296 | -.2296 |
| 180.000 |        |       |       |       |        |        |        |        |        | -.4180 | -.4180 | -.4180 | -.4180 | -.4180 | -.4180 | -.4180 |

| X/LB    | PHI    | .0596 | -.0309 | -.0794 | -.1652 | -.2424 | -.2971 | -.3722 | -.6944 | -.6733 | -.5059 | -.4080 |
|---------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 20.000  | 1.3231 | .9658 | .7316  | .6214  | .5439  | .5815  | .9668  | .9668  | -.6944 | -.6733 | -.5059 | -.4080 |
| 40.000  |        |       |        |        |        |        |        |        | -.6944 | -.6733 | -.5059 | -.4080 |
| 60.000  |        |       |        |        |        |        |        |        | -.6944 | -.6733 | -.5059 | -.4080 |
| 80.000  |        |       |        |        |        |        |        |        | -.6944 | -.6733 | -.5059 | -.4080 |
| 100.000 |        |       |        |        |        |        |        |        | -.6944 | -.6733 | -.5059 | -.4080 |
| 120.000 |        |       |        |        |        |        |        |        | -.6944 | -.6733 | -.5059 | -.4080 |
| 140.000 |        |       |        |        |        |        |        |        | -.6944 | -.6733 | -.5059 | -.4080 |
| 160.000 |        |       |        |        |        |        |        |        | -.6944 | -.6733 | -.5059 | -.4080 |
| 180.000 |        |       |        |        |        |        |        |        | -.6944 | -.6733 | -.5059 | -.4080 |

ALPHA ( 1 ) = -3.998 BETA ( 3 ) = 4.285 MACH = 1.1022 Q = 601.66 P = 707.48 RN/L = 3.1893

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | PHI    | .0000 | .0090 | .0230 | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| 20.000  | 1.3071 | .5409 | .1327 | .0841 | .0220  | -.0127 | -.0549 | -.0152 | -.0196 | -.0399 | -.0867 | -.1393 | -.1304 | -.1056 | -.0332 |       |
| 40.000  |        |       | .1346 | .0657 | -.0127 | -.0549 | -.0196 | -.0196 | -.0196 | -.0399 | -.0867 | -.1393 | -.1304 | -.1056 | -.0332 |       |
| 60.000  |        |       | .2389 | .0636 | .0060  | -.0219 | -.0219 | -.0219 | -.0219 | -.0399 | -.0867 | -.1393 | -.1304 | -.1056 | -.0332 |       |
| 80.000  |        |       | .3365 | .1273 | .0679  | .0256  | -.0354 | -.0354 | -.0354 | -.0399 | -.0867 | -.1393 | -.1304 | -.1056 | -.0332 |       |
| 100.000 |        |       | .4088 | .1806 | .1249  | .1047  | -.0020 | -.0020 | -.0020 | -.0399 | -.0867 | -.1393 | -.1304 | -.1056 | -.0332 |       |
| 120.000 |        | .5892 | .4775 | .2424 | .1869  | .1167  | -.0057 | -.0057 | -.0057 | -.0399 | -.0867 | -.1393 | -.1304 | -.1056 | -.0332 |       |
| 140.000 |        |       | .5787 | .4013 | .2776  | .3088  | .1833  | .1833  | .1833  | -.0399 | -.0867 | -.1393 | -.1304 | -.1056 | -.0332 |       |
| 160.000 |        |       |       |       |        |        |        |        |        | -.0399 | -.0867 | -.1393 | -.1304 | -.1056 | -.0332 |       |
| 180.000 |        |       |       |       |        |        |        |        |        | -.0399 | -.0867 | -.1393 | -.1304 | -.1056 | -.0332 |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB820)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 1 ) = -3.998 BETA ( 3 ) = 4.285

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |       |        |        |        |        |        |       |
| 140.000 |        |       |       |       |       |       |       |       |       |        |        |        |        |        |       |
| 150.000 |        |       | .6667 | .5575 | .4527 | .4818 |       | .6735 | .3549 | -.4684 | -.5280 | -.2654 | -.2821 | -.0382 |       |
| 160.000 |        |       |       |       |       |       |       |       | .4555 |        |        |        |        |        |       |
| 165.000 |        |       |       |       |       |       |       |       |       |        |        |        |        |        |       |
| 169.000 |        |       |       |       |       |       |       |       |       |        |        |        |        |        |       |
| 174.000 |        |       |       |       |       |       |       | .8126 |       |        |        |        |        |        |       |
| 180.000 | 1.3071 | .9452 | .7301 | .6139 | .5351 | .5762 | .9148 | .8364 |       | -.5676 | -.4190 | -.2274 | -.2175 | -.0384 |       |

| Y/LB    | .6520 | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| PHI     |       |       |       |       |       |       |       |       |        |        |
| 140.000 |       |       |       |       |       |       |       |       |        |        |
| 150.000 |       |       |       |       |       |       |       |       |        |        |
| 160.000 |       |       |       |       |       |       |       |       |        |        |
| 165.000 |       |       |       |       |       |       |       |       |        |        |
| 169.000 |       |       |       |       |       |       |       |       |        |        |
| 174.000 |       |       |       |       |       |       |       |       |        |        |
| 180.000 |       |       |       |       |       |       |       |       |        |        |

| PHI     | .000 | .0657 | -.0229 | -.0733 | -.1534 | -.2455 | -.3099 | -.3834 | -.6985 | -.6564 |
|---------|------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| 140.000 |      |       |        |        |        |        |        |        |        |        |
| 150.000 |      |       |        |        |        |        |        |        |        |        |
| 160.000 |      |       |        |        |        |        |        |        |        |        |
| 165.000 |      |       |        |        |        |        |        |        |        |        |
| 169.000 |      |       |        |        |        |        |        |        |        |        |
| 174.000 |      |       |        |        |        |        |        |        |        |        |
| 180.000 |      |       |        |        |        |        |        |        |        |        |

| PHI     | .000 | .0657 | -.0229 | -.0733 | -.1534 | -.2455 | -.3099 | -.3834 | -.6985 | -.6564 |
|---------|------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| 140.000 |      |       |        |        |        |        |        |        |        |        |
| 150.000 |      |       |        |        |        |        |        |        |        |        |
| 160.000 |      |       |        |        |        |        |        |        |        |        |
| 165.000 |      |       |        |        |        |        |        |        |        |        |
| 169.000 |      |       |        |        |        |        |        |        |        |        |
| 174.000 |      |       |        |        |        |        |        |        |        |        |
| 180.000 |      |       |        |        |        |        |        |        |        |        |

ALPHA ( 2 ) = -.035 BETA ( 1 ) = -3.867 MACH = 1.1011 Q = 601.17 P = 708.39 RN/L = 3.1906

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |       |       |       |       |       |       |       |        |        |        |        |        |        |        |       |
| 140.000 |       |       |       |       |       |       |       |        |        |        |        |        |        |        |       |
| 150.000 |       |       | .2555 | .1637 | .0754 | .0274 |       | .0224  | -.0123 | -.0389 | -.0893 | -.0903 | -.1113 | -.1367 |       |
| 160.000 |       |       | .2933 | .1657 | .0470 | .0593 |       | -.0014 | -.0468 | -.1229 | -.1243 | -.0839 | -.1127 | -.0414 |       |
| 165.000 |       |       | .4679 | .2163 | .1047 | .0593 |       | -.0252 | -.1120 |        |        |        |        |        |       |
| 169.000 |       |       | .5926 | .3658 | .2676 | .1933 |       | .1056  | .0096  |        |        |        |        |        |       |
| 174.000 |       |       | .6556 | .4279 | .3282 | .2788 |       | .1598  | .0354  | -.3843 | -.1409 | -.1388 | -.0538 |        |       |
| 180.000 | .8551 | .6955 | .4751 | .3502 | .3217 | .1991 |       | .1991  | -.0254 | -.3513 | -.2351 | -.1643 | -.0526 |        |       |
| PHI     |       |       |       |       |       |       |       |        |        |        |        |        |        |        |       |
| 140.000 |       |       |       |       |       |       |       |        |        |        |        |        |        |        |       |
| 150.000 |       |       |       |       |       |       |       |        |        |        |        |        |        |        |       |
| 160.000 |       |       |       |       |       |       |       |        |        |        |        |        |        |        |       |
| 165.000 |       |       |       |       |       |       |       |        |        |        |        |        |        |        |       |
| 169.000 |       |       |       |       |       |       |       |        |        |        |        |        |        |        |       |
| 174.000 |       |       |       |       |       |       |       |        |        |        |        |        |        |        |       |

.9394

(XEBB20)

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 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

| ALPHA ( 2 ) =    - .036    BETA ( 1 ) =   -3.867 |        |        |        |                       |        |        |        |        |        |        |        |        |        |        |       |
|--|--------|--------|--------|-----------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| SECTION ( 1 ) ORBITER FUSELAGE                   |        |        |        | DEPENDENT VARIABLE CP |        |        |        |        |        |        |        |        |        |        |       |
| X/LB   | .0000  | .0080  | .0230  | .0460                 | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2310  | .3010  | .3780  | .4970  | .5740 |
| PHI  |        |        |        |                       |        |        |        |        |        |        |        |        |        |        |       |
| 180.000  | 1.3293 | .8523  | .6052  | .5110                 | .4420  | .5015  |        | .7733  |        | -.6041 | -.5156 | -.3063 | -.2564 | -.0473 |       |
| X/LB   | .6520  | .7290  | .7790  | .8210                 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI  |        |        |        |                       |        |        |        |        |        |        |        |        |        |        |       |
| .000   | .0833  | .0503  | .0149  | -.0584                | -.1539 | -.2081 | -.3099 |        |        | -.6648 | -.6549 |        |        |        |       |
| 40.000   | .0043  | .0263  | -.0189 | -.1745                | -.1649 | -.3551 |        |        | -.5316 | -.3671 |        |        |        |        |       |
| 70.000   | .0305  | -.1499 | .0423  | .2611                 | .0407  | -.0471 | -.0848 |        |        |        |        |        |        |        |       |
| 90.000   | .0633  | -.0924 | .1470  | .2711                 | .0077  | -.1253 | -.1181 |        |        |        |        |        |        |        |       |
| 105.000  |        |        | .2643  | .2736                 | -.0774 | -.1787 | -.1775 |        |        |        |        |        |        |        |       |
| 110.000  |        |        |        |                       |        |        |        | -.3808 |        |        |        |        |        |        |       |
| 120.000  | .0371  | .0218  | .3876  | .2892                 | -.1406 | -.1635 | -.1954 | -.2628 |        |        |        |        |        |        |       |
| 135.000  |        |        | .4452  | .4317                 | -.0994 | -.0660 | -.1196 |        |        |        |        |        |        |        |       |
| 150.000  | .0701  | .1650  | .4529  | .4114                 | -.0107 | -.0084 | -.1040 |        |        |        |        |        |        |        |       |
| 165.000  | .0784  |        | .4267  |                       | .2572  | .0649  | -.3226 |        |        |        |        |        |        |        |       |
| 180.000  | .0922  | .2170  | .4094  | .4856                 |        |        |        |        |        |        |        |        |        |        |       |

ALPHA ( 2 ) = -.059 BETA ( 2 ) = .183 MACH = 1.1011 Q = 601.17 P = 708.39 RN/L = 3.1906

| SECTION ( 1 ) ORBITER FUSELAGE |          |       |       |       |       |       |       |       |       |       |       |
|--------------------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| X/LB                           |          | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 |
| PHI                            |          |       |       |       |       |       |       |       |       |       |       |
| 180.000                        | 1.3354   | .6933 | .2641 | .1761 | .0825 | .0238 |       |       |       |       |       |
| PHI                            |          |       |       |       |       |       |       |       |       |       |       |
| 180.000                        | .20.000  | .2805 | .1684 | .1684 | .0487 | .0238 |       |       |       |       |       |
| PHI                            |          |       |       |       |       |       |       |       |       |       |       |
| 180.000                        | .40.000  | .4078 | .1924 | .1924 | .0919 | .0635 |       |       |       |       |       |
| PHI                            |          |       |       |       |       |       |       |       |       |       |       |
| 180.000                        | .55.000  | .4962 | .2809 | .2809 | .1936 | .1473 |       |       |       |       |       |
| PHI                            |          |       |       |       |       |       |       |       |       |       |       |
| 180.000                        | .70.000  | .5452 | .3211 | .3211 | .2289 | .2073 |       |       |       |       |       |
| PHI                            |          |       |       |       |       |       |       |       |       |       |       |
| 180.000                        | .90.000  | .5873 | .3639 | .3639 | .2475 | .2380 |       |       |       |       |       |
| PHI                            |          |       |       |       |       |       |       |       |       |       |       |
| 180.000                        | .120.000 | .6313 | .4615 | .4615 | .3487 | .3940 |       |       |       |       |       |
| PHI                            |          |       |       |       |       |       |       |       |       |       |       |
| 180.000                        | .140.000 | .6358 | .5195 | .5195 | .4201 | .4799 |       |       |       |       |       |
| PHI                            |          |       |       |       |       |       |       |       |       |       |       |
| 180.000                        | .162.000 |       |       |       |       |       |       |       |       |       |       |
| PHI                            |          |       |       |       |       |       |       |       |       |       |       |
| 180.000                        | .165.000 |       |       |       |       |       |       |       |       |       |       |
| PHI                            |          |       |       |       |       |       |       |       |       |       |       |
| 180.000                        | .174.000 |       |       |       |       |       |       |       |       |       |       |
| PHI                            |          |       |       |       |       |       |       |       |       |       |       |
| 180.000                        | .180.000 |       |       |       |       |       |       |       |       |       |       |

PHI 180.000 .0823 .0401 .0054 -.0740 -.1624 -.2217 -.3008  
 PHI 40.000 .0408 .0109 -.0632 -.1679 -.1820 -.3379

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = -.059 BETA ( 2 ) = .183

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .6520 | .7290  | .7790 | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|-------|--------|-------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |       |        |       |       |        |        |        |        |        |        |
| 70.000  | .0189 | -.1481 | .1274 | .2363 | .0019  | -.0869 | -.1322 |        |        |        |
| 90.000  | .0474 | -.0717 | .2036 | .2100 | -.0474 | -.1438 | -.1550 |        |        |        |
| 105.000 |       |        | .2723 | .1964 | -.1286 | -.2049 | -.2326 |        |        |        |
| 110.000 |       |        |       |       |        |        |        | -.4035 |        |        |
| 120.000 | .0692 | .0790  | .3384 | .2059 | -.1760 | -.2269 | -.2718 | -.3307 |        |        |
| 135.000 |       |        | .3811 | .4187 | -.0988 | -.1414 | -.1859 |        |        |        |
| 150.000 | .0835 | .1802  | .4045 | .4524 | -.0233 | -.0902 | -.1703 |        |        |        |
| 165.000 | .0939 |        | .4127 |       | .1891  | -.0295 | -.3253 |        |        |        |
| 180.000 | .0938 | .2022  | .4230 | .5716 |        |        |        |        |        |        |

ALPHA ( 2 ) = -.052 BETA ( 3 ) = .4261 MACH = 1.1011 Q = 601.17 P = 708.39 RN/L = 3.1906

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460  | .0700  | .1120  | .1580  | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|--------|-------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |       |        |        |        |        |       |        |        |        |        |        |        |        |
| .000    | 1.3203 | .6761  | .2542 | .1699  | .0821  |        |        | .0228 |        | .0067  | -.0436 | -.0887 | -.0939 | -.1074 | -.0443 |
| 20.000  |        |        | .2507 | .1492  | .0440  | .0254  |        | .0306 |        | -.0153 |        |        |        |        |        |
| 40.000  |        |        | .3336 | .1584  | .0703  | .0550  |        | .7341 |        | -.0505 | -.0906 | -.1328 | -.1020 | -.0965 | .0091  |
| 55.000  |        |        | .3972 | .1993  | .1253  | .1072  |        | .0706 |        | -.0706 |        |        |        |        |        |
| 70.000  |        |        | .4341 | .2186  | .1435  | .1484  |        | .0829 |        | -.0829 | -.4878 | -.2860 | -.2100 | -.0511 |        |
| 90.000  | .5772  |        | .4765 | .2534  | .1579  | .1642  |        | .0591 |        | -.2219 | -.4978 | -.3814 | -.1702 | -.0394 |        |
| 120.000 |        |        | .5385 | .3675  | .2531  | .3155  |        | .2262 |        | -.2595 | -.4847 | -.6888 | -.1742 | -.0285 |        |
| 140.000 |        |        | .5779 | .4728  | .3739  | .4329  |        | .6542 |        | -.4652 | -.5929 | -.3347 | -.2628 | -.0405 |        |
| 150.000 |        |        |       |        |        |        |        | .3443 |        | -.5498 |        |        |        |        |        |
| 162.000 |        |        |       |        |        |        |        | .4298 |        |        |        |        |        |        |        |
| 169.000 |        |        |       |        |        |        |        |       | -.5054 | -.6186 | -.3009 | -.2793 | -.0436 |        |        |
| 174.000 |        |        |       |        |        |        |        |       |        |        |        |        |        |        |        |
| 180.000 | 1.3203 | .8280  | .5198 | .5170  | .4419  | .5036  | .8755  | .7817 |        | -.6139 | -.4983 | -.3035 | -.2497 | -.0511 |        |
| X/LB    | .6520  | .7290  | .7790 | .8210  | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |        |        |        |        |        |
| PHI     |        |        |       |        |        |        |        |       |        |        |        |        |        |        |        |
| .000    | .0894  | .0516  | .0086 | -.0645 | -.1555 | -.2273 | -.3147 |       |        |        |        |        |        |        |        |
| 40.000  | .0302  |        | .0195 | -.0576 | -.1736 | -.2018 | -.3185 |       |        |        |        |        |        |        |        |
| 70.000  | .0422  | -.0951 | .1107 | .2079  | -.0464 | -.1593 | -.2015 |       |        |        |        |        |        |        |        |
| 90.000  | .0745  | -.0133 | .1704 | .1961  | -.1099 | -.2113 | -.2202 |       |        |        |        |        |        |        |        |
| 105.000 |        |        | .2429 | .1569  | -.2024 | -.2735 | -.3010 |       |        |        |        |        |        |        |        |
| 110.000 |        |        |       |        |        |        |        |       |        |        |        |        |        |        |        |
| 120.000 | .1073  | .1169  | .2800 | .0775  | -.2803 | -.3400 | -.3791 |       |        |        |        |        |        |        |        |
| 125.000 |        |        | .3658 | .3989  | -.1899 | -.2512 | -.2880 |       |        |        |        |        |        |        |        |
| 150.000 | .1166  | .1588  | .3965 | .4169  | -.0893 | -.2063 | -.2806 |       |        |        |        |        |        |        |        |

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 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (XE8820)

ALPHA ( 2 ) = -.052 BETA ( 3 ) = 4.261

# SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI  
 165.000 .1173 .3999 .1160 -.1232 -.3410  
 180.000 .1033 .2199 .4139 .4902

ALPHA ( 3 ) = 3.856 BETA ( 1 ) = -3.869 MACH = 1.1013 Q = 601.26 P = 708.16 RN/L = 3.1838

# SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI  
 .000 1.3181 .8219 .3790 .2635 .1675 .0801 .0890 .0469 .0149 -.0362 -.0270 -.0572 -.0439  
 20.000 .4235 .2685 .1453 .0801 .0814 .0256 .0814 .0256  
 40.000 .5706 .3281 .2153 .1570 .0913 .0115 -.0134 -.0364 -.0022 -.0705 .0077  
 55.000 .6470 .4236 .3241 .2506 .1753 .0766 .1753 .0852 -.3236 -.1276 -.1378 -.1075  
 70.000 .6624 .4425 .3335 .2930 .1911 .0310 -.3397 -.1829 -.1973 -.1093  
 90.000 .6672 .4565 .3394 .3218 .2258 .0020 -.3122 -.5356 -.3081 -.1739  
 120.000 .6374 .4732 .3633 .4140 .4176 -.0787 -.3162 -.4902 -.2049 -.0820  
 140.000 .5563 .4357 .3489 .4336 .7877 .5023  
 150.000 .5318  
 151.000 .8165  
 162.000 .8972  
 169.000 .7306  
 174.000 .8165  
 180.000 .7306

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI  
 .000 .1594 .1677 .1250 .0284 -.0720 -.1681 -.2810  
 40.000 .1118 .1413 .1413 .0389 -.1098 -.1062 -.2954  
 70.000 -.0549 -.2537 -.3129 .1570 -.0217 -.0638 -.0550  
 90.000 -.0172 -.1748 -.0797 .1395 -.0536 -.1715 -.0877  
 105.000 .1351 .1427 -.1328 -.2462 -.1627  
 110.000 .1441 .1473 -.2396 -.2505  
 120.000 .3147 .3003 -.1582 -.1487 -.1904  
 135.000 .3147 .3128 -.0849 -.0704 -.1691  
 150.000 .0376 .1071 .1987 .0189 -.3331  
 165.000 .0567 .3104 .4040  
 180.000 .0575 .1404 .4040

-.6434  
 -.5356  
 -.6572  
 -.3787  
 -.3435  
 -.2195

AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

(02883X)

|               |       |              |      |      |          |   |          |   |          |      |          |
|---------------|-------|--------------|------|------|----------|---|----------|---|----------|------|----------|
| ALPHA ( 3 ) = | 3.924 | BETA ( 2 ) = | .189 | MACH | = 1.1013 | Q | = 601.26 | P | = 708.16 | RN/L | = 3.1838 |
|---------------|-------|--------------|------|------|----------|---|----------|---|----------|------|----------|

## SECTION (1) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| .000    | 1.3248 | .8290 | .3879 | .2725 | .1729 |       |       | .0985 |       | .0535  | .0240  | -.0305 | -.0306 | -.0523 | -.0274 |
| 20.000  |        |       | .4091 | .2628 | .1457 | .0676 |       | .0933 |       | .0364  |        |        |        |        |        |
| 40.000  |        |       | .5011 | .2899 | .1851 | .1386 |       | .1348 |       | .0312  | -.0131 | -.0483 | -.0216 | -.0715 | .0106  |
| 55.000  |        |       | .5435 | .3375 | .2422 | .1924 |       | .1348 |       | .0354  |        |        |        |        |        |
| 70.000  |        |       | .5513 | .3377 | .2367 | .2231 |       | .1358 |       | .0276  | -.3754 | -.2082 | -.2009 | -.0996 |        |
| 90.000  | .6886  |       | .5609 | .3548 | .2410 | .2540 |       | .1629 |       | -.0563 | -.4056 | -.2616 | -.2465 | -.0923 |        |
| 120.000 |        |       | .5609 | .3590 | .2918 | .3697 |       | .3442 |       | -.2090 | -.3778 | -.5931 | -.2156 | -.0901 |        |
| 140.000 |        |       |       |       |       |       |       |       |       | -.4948 | -.6755 | -.4596 | -.1986 | -.0434 |        |
| 150.000 |        |       | .5268 | .4222 | .3207 | .4199 |       | .7088 | .4253 |        |        |        |        |        |        |
| 151.000 |        |       |       |       |       |       |       |       | .4789 |        |        |        |        |        |        |
| 162.000 |        |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| 165.000 |        |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| 169.000 |        |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| 174.000 |        |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| 80.000  | 1.3248 | .7086 | .4990 | .4179 | .3448 | .4423 | .8811 | .7883 |       | -.5492 | -.5692 | -.3497 | -.2215 | -.0356 |        |

|               |       |              |       |      |          |   |          |   |          |      |          |
|---------------|-------|--------------|-------|------|----------|---|----------|---|----------|------|----------|
| ALPHA ( 3 ) = | 3.921 | BETA ( 3 ) = | 4.251 | MACH | = 1.1013 | Q | = 601.26 | P | = 708.16 | RN/L | = 3.1838 |
|---------------|-------|--------------|-------|------|----------|---|----------|---|----------|------|----------|

## SECTION (1) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

|         | X/LB | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| Phi     |      |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 20.000  |      | 1.3114 | .8077 | .3743 | .2643 | .1597 |       |       | .0989 | .0445  | .0085  | -.0313 | -.0362 | -.0615 | -.0445 |       |
| 40.000  |      |        |       | .3655 | .2359 | .1169 | .0486 | .0878 | .0878 | .0254  |        |        |        |        |        |       |
| 55.000  |      |        |       | .4164 | .2411 | .1411 | .1006 | .1017 | .1017 | .0192  | -.0262 | -.0769 | -.0650 | -.0915 | -.0029 |       |
| 70.000  |      |        |       | .4357 | .2430 | .1555 | .1319 | .0944 | .0944 | -.0080 |        |        |        |        |        |       |
| 90.000  |      |        | .5384 | .4540 | .2370 | .1655 | .1612 | .0899 | .0899 | -.0288 | -.4268 | -.2834 | -.2585 | -.0830 |        |       |
| 120.000 |      |        |       | .4759 | .2491 | .1458 | .1874 | .1067 | .1067 | -.1415 | -.4682 | -.3333 | -.2566 | -.0689 |        |       |
|         |      |        |       |       | .3146 | .2087 | .3132 | .2561 | .2561 | -.2198 | -.6425 | -.1902 | -.0481 |        |        |       |





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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB820)

ALPHA ( 4 ) = 7.865 BETA ( 2 ) = .180

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

70.000 -.1085 -.3447 -.3830 .0246 -.0892 -.1270 -.1301  
 90.000 -.0527 -.2230 -.2119 .0086 -.1740 -.1836 -.1650  
 105.000 .0243 .0477 -.2515 -.2494 -.2799  
 110.000  
 120.000 -.0443 -.1119 .1225 .0710 -.2805 -.3287 -.3086  
 135.000 .1803 .1803 .3421 -.1781 -.2620 -.2949  
 150.000 .0543 -.0332 .2379 .5212 -.1143 -.2118 -.2787  
 165.000 .0753 .2721 .0828 -.1539 -.3440  
 180.000 .0686 -.0049 .2949 .5605

-.3846  
 -.2849

ALPHA ( 4 ) = 7.863 BETA ( 3 ) = 4.247 MACH = 1.1008 Q = 600.53 P = 707.91 RNL = 3.1857

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.2794 .9291 .5014 .3577 .2465 .1425 .1075 .0646 .0355 .0322 .0021 .0112  
 20.000 .4871 .3269 .2095 .1369 .1307 .1307 .0789 .0182 -.0234 -.0130 -.0376 .0027  
 40.000 .4983 .3139 .2176 .1555 .1406 .1406 .0696 .0380 .0094 -.2671 -.3230 -.1415  
 55.000 .4547 .2623 .1814 .1395 .1087 .1087 .0380 .0094 -.3587 -.4330 -.5121 -.2466  
 70.000 .4307 .2325 .1414 .1675 .1111 .1111 .0094 -.0811 -.4611 -.6266 -.2466  
 90.000 .4321 .2370 .1385 .1949 .1338 .1338 .0094 -.3175 -.5991 -.7206 -.4425 -.1954  
 120.000 .4152 .2635 .1629 .2981 .2833 .2833 .0094 -.3175 -.5991 -.7206 -.4425 -.1954  
 140.000 .3845 .3019 .2043 .3402 .6181 .6181 .0094 -.3175 -.5991 -.7206 -.4425 -.1954  
 151.000  
 163.000  
 174.000  
 180.000 1.2794 .5462 .3842 .3258 .2410 .3718 .7976 .7154 .7234 .7234 .7234 .7234 .7234 .7234

PHI

.000 .2353 .2462 .1957 .0920 -.0149 -.1111 -.2344  
 40.000 .2507 .2120 .1085 -.0400 -.1020 -.2483  
 70.000 -.0936 -.3077 -.3300 .0296 .1526 .2541 .2242  
 90.000 -.0329 -.2034 -.1175 -.0125 -.2209 -.2900 -.3121  
 105.000 .0353 .0130 .2956 -.3747 .4067  
 110.000  
 120.000 .0446 -.0762 .1116 -.0376 .3373 .3960 .5037  
 135.000 .2353 .2963 .2534 .3450 .3655  
 150.000 .0945 -.0013 .2952 .4087 .1900 .3124 .3688

-.4334  
 -.4072

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8820)

ALPHA ( 4 ) = 7.865 BETA ( 3 ) = 4.247

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

## PHI

165.000 .0837 .2759 .0189 -.2446 -.3625  
180.000 .0614 .0091 .2564 .4951

ALPHA ( 5 ) = 11.903 BETA ( 1 ) = -3.846 MACH = 1.1003 Q = 600.53 P = 708.60 RN/L = 3.1882

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1860 .1770 .2040 .2510 .3010 .3780 .4970 .5740

## PHI

.000 1.2314 1.0534 .6287 .4652 .3491 .2529 .2009 .1866 .1291 .1089 .1183 .0965 .2004  
20.000 .6752 .4854 .3515 .2529 .2094 .2094 .1880  
40.000 .7432 .4753 .3187 .3187 .2503 .2104 .1408 .1159 .1417 .0965 .2439  
60.000 .6997 .4887 .3752 .2813 .2203 .1765 .1577 .2315 .1117 .1214 .2311  
80.000 .6275 .4283 .3084 .2799 .2224 .1062 .2973 .1456 .1918 .2827  
90.000 .5859 .3845 .2821 .2780 .2454 .0178 .3425 .5142 .7205 .3503  
120.000 .4412 .2825 .1811 .2901 .3958 .0830 .7780 .6762 .2872 .1338  
140.000 .3110 .2183 .1318 .3050 .7469 .4681  
160.000 .150.000 .4769  
180.000 .7550  
165.000 .8089  
174.000 .6599  
180.000 .9990 1.0180 1.0460

## X/LB

1.2314 .4169 .2390 .2193 .1482 .3109 .8089 .7550 .6599 .9990 1.0180 1.0460

## PHI

.000 .3242 .3268 .2677 .1566 .0570 .0633 .1945  
40.000 .3435 .2958 .1810 .0146 .0154 .2008  
70.000 .1407 .3865 .4608 .0638 .0787 .2188 .2387  
90.000 .0661 .2912 .3907 .0211 .1030 .2094 .3262  
100.000 .1239 .0582 .1471 .2677 .3633  
110.000 .1856 .2010 .0515 .1032 .1995 .2656 .2550  
120.000 .0712 .2815 .2126 .2029 .2534  
130.000 .0557 .1739 .0571 .4378 .1423 .2028 .2876  
140.000 .0412 .1521 .0845 .0999 .3571  
160.000 .0730 .0408 .5402

|   |   |              |        |        |        |       |        |       |        |        |        |       |       |          |       |
|---|---|--------------|--------|--------|--------|-------|--------|-------|--------|--------|--------|-------|-------|----------|-------|
| DATE 10 FEB 76  | TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 ) |              |        |        |        |       |        |       |        |        |        |       |       | PAGE 303 |       |
| AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (XE8820)                                      |   |              |        |        |        |       |        |       |        |        |        |       |       |          |       |
| ALPHA ( 5 ) =   | 11.911  | BETA ( 2 ) = | .188   | MACH = | 1.1003 | Q =   | 600.53 | P =   | 708.60 | RN/L = | 3.1882 |       |       |          |       |
| SECTION ( 1 ) ORBITTER FUSELAGE DEPENDENT VARIABLE CP                                     |   |              |        |        |        |       |        |       |        |        |        |       |       |          |       |
| X/LB  | .0000   | .0080        | .0230  | .0460  | .0700  | .1120 | .1580  | .1660 | .1770  | .2040  | .2510  | .3010 | .3780 | .4970    | .5740 |
| PHI   | .000  | 1.2398       | 1.0552 | .6364  | .4721  | .3515 | .2383  | .2065 | .1899  | .1340  | .1125  | .1170 | .1007 | .1727    |       |
| 20.000  |   |              |        | .6440  | .4615  | .3313 | .2383  | .2058 | .1757  | .1257  | .0988  | .0792 | .0945 | .3735    | .1980 |
| 40.000  |   |              |        | .6542  | .4568  | .3434 | .2621  | .2171 | .1733  | .1257  | .0988  | .0792 | .0945 | .3735    | .1980 |
| 55.000  |   |              |        | .5763  | .3756  | .2644 | .1893  | .1477 | .1074  | .0749  | .0420  | .0104 | .0000 | .0000    | .0000 |
| 70.000  |   |              |        | .5080  | .3188  | .2071 | .1203  | .1586 | .1074  | .0749  | .0420  | .0104 | .0000 | .0000    | .0000 |
| 90.000  |   | .5637        |        | .4653  | .2909  | .1827 | .2242  | .1949 | .1074  | .0749  | .0420  | .0104 | .0000 | .0000    | .0000 |
| 120.000   |   |              |        | .3865  | .2362  | .1309 | .2910  | .3543 | .1850  | .0651  | .0029  | .0000 | .0000 | .0000    | .0000 |
| 140.000   |   |              |        | .2998  | .2265  | .1112 | .3128  | .6710 | .4030  | .7736  | .5863  | .2416 | .0896 |          |       |
| 150.000   |   |              |        |        |        |       |        |       | .4254  |        |        |       |       |          |       |
| 162.000   |   |              |        |        |        |       |        | .6998 |        |        |        |       |       |          |       |
| 165.000   |   |              |        |        |        |       |        |       |        |        |        |       |       |          |       |
| 169.000   |   |              |        |        |        |       |        |       |        |        |        |       |       |          |       |
| 174.000   |   |              |        |        |        |       |        |       |        |        |        |       |       |          |       |
| 180.000   |   |              |        |        |        |       |        |       |        |        |        |       |       |          |       |
| X/LB  | 1.2398  | .4072        | .2603  | .2000  | .1375  | .3248 | .7679  | .6871 | .7588  | .7314  | .4076  | .1809 | .0379 |          |       |
| PHI   | .000  | .3183        | .3277  | .2725  | .1634  | .0634 | .0519  | .1780 | .5761  | .5982  |        |       |       |          |       |
| 20.000  |   | .3341        | .2975  | .2975  | .1840  | .0230 | .0113  | .1908 | .4641  | .3358  |        |       |       |          |       |
| 40.000  |   | .1205        | .4250  | .4898  | .1818  | .1583 | .2008  | .1683 |        |        |        |       |       |          |       |
| 55.000  |   | .0598        | .3068  | .3944  | .0943  | .1950 | .2288  | .2489 |        |        |        |       |       |          |       |
| 70.000  |   |              |        | .1407  | .0017  | .4428 | .3088  | .3425 |        |        |        |       |       |          |       |
| 90.000  |   |              |        |        |        |       |        |       |        |        |        |       |       |          |       |
| 110.000   |   |              |        |        |        |       |        |       |        |        |        |       |       |          |       |
| 120.000   |   | .0431        | .1395  | .0336  | .0687  | .3137 | .3494  | .3506 |        |        |        |       |       |          |       |
| 135.000   |   |              |        | .1105  | .3115  | .2266 | .3040  | .3188 |        |        |        |       |       |          |       |
| 150.000   |   | .0393        | .0324  | .1621  | .5348  | .1828 | .2793  | .3204 |        |        |        |       |       |          |       |
| 165.000   |   | .0862        |        | .2333  |        | .0567 | .1974  | .3611 |        |        |        |       |       |          |       |
| 180.000   |   | .0924        | .0285  | .2534  | .5893  |       |        |       |        |        |        |       |       |          |       |
| ALPHA ( 5 ) = 11.905 BETA ( 3 ) = .4263 MACH = 1.1003 Q = 600.53 P = 708.60 RN/L = 3.1882 |   |              |        |        |        |       |        |       |        |        |        |       |       |          |       |
| SECTION ( 1 ) ORBITTER FUSELAGE DEPENDENT VARIABLE CP                                     |   |              |        |        |        |       |        |       |        |        |        |       |       |          |       |
| X/LB  | .0000   | .0080        | .0230  | .0460  | .0700  | .1120 | .1580  | .1660 | .1770  | .2040  | .2510  | .3010 | .3780 | .4970    | .5740 |
| PHI   | .000  | 1.2256       | 1.0411 | .6246  | .4667  | .3381 | .2138  | .2058 | .1743  | .1298  | .1118  | .1127 | .0884 | .1811    |       |
| 20.000  |   |              |        | .5958  | .4286  | .2968 | .2138  | .1938 | .1462  | .0815  | .0316  | .0489 | .0342 | .1726    |       |
| 40.000  |   |              |        | .5478  | .3823  | .2715 | .1903  | .1686 | .1141  | .0815  | .0316  | .0489 | .0342 | .1726    |       |
| 55.000  |   |              |        | .4493  | .2649  | .1057 | .1057  | .0836 | .0815  | .0815  | .0319  | .2753 | .2821 | .3410    |       |
| 70.000  |   |              |        | .3913  | .2202  | .1075 | .1531  | .1071 | .0705  | .0705  | .0319  | .2753 | .2821 | .3410    |       |
| 90.000  |   | .4184        |        | .3725  | .2037  | .0855 | .1852  | .1432 | .0114  | .0114  | .4069  | .2989 | .3294 | .2316    |       |
| 120.000   |   |              |        | .3273  | .1883  | .0536 | .2715  | .3024 | .1462  | .4659  | .6103  | .3533 | .1464 |          |       |





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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB8211)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 1 ) = -4.030 BETA ( 2 ) = .192 MACH = .90000 Q = 600.22 P = 1058.5 RN/L = 3.5693

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | 0.000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     | 1.1972 | .3571  | -.0692 | -.1026 | -.1721 | -.2223 | -.2101 | -.2391 | -.2453 | -.2224 | -.1957 | -.0647 | -.0278 | .0021  | -.0139 |
| 20.000  | -.0515 | -.1249 | -.2187 | -.2223 | -.2101 | -.2391 | -.2453 | -.2224 | -.1957 | -.0647 | -.0278 | .0021  | -.0139 | -.0151 |        |
| 40.000  | .1039  | -.1152 | -.2078 | -.2133 | -.3081 | -.2408 | -.3432 | -.3513 | -.0795 | -.0437 | -.0183 | -.0183 | -.0151 |        |        |
| 55.000  | .2468  | .0167  | -.0643 | -.1335 | -.1846 | -.1846 | -.3210 | -.7715 | -.0441 | .0424  | .0783  |        |        |        |        |
| 70.000  | .3474  | .1114  | .0269  | -.0213 | -.1694 | -.1694 | -.4583 | -.7328 | -.0994 | .0294  | .0740  |        |        |        |        |
| 90.000  | .4275  | .1848  | .0974  | .0118  | -.0616 | -.0616 | -.4294 | -.6798 | -.1715 | .0069  | .0463  |        |        |        |        |
| 120.000 | .5314  | .3482  | .2241  | .2334  |        |        | -.4478 | -.7972 | -.0306 | .0168  | .6377  |        |        |        |        |
| 140.000 | .5873  | .4606  | .3572  | .3704  | .5798  |        | .2317  |        |        |        |        |        |        |        |        |
| 151.000 |        |        |        |        |        |        | .3106  |        |        |        |        |        |        |        |        |
| 162.000 |        |        |        |        |        |        | .6838  |        |        | -.8464 | -.7476 | -.0233 | .0187  | .0429  |        |
| 165.000 |        |        |        |        |        |        | .8142  |        |        | -.9548 | -.7318 | -.0088 | .0187  | .0408  |        |
| 169.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 174.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 180.000 | 1.1972 | .8387  | .5929  | .4743  | .3965  | .4212  | .8142  | .6742  | -.9548 | -.7318 | -.0088 | .0187  | .0408  |        |        |

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

## PHI

| X/LB    | 0.000  | .2067  | -.2512 | -.3470 | -.4654 | -.5022 | -.2711 | -.4787 | -.2921 | -.3375 | -.2439 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 40.000  | -.1285 | -.2067 | -.2512 | -.3470 | -.4654 | -.5022 | -.2711 | -.4787 | -.2921 | -.3375 | -.2439 |
| 70.000  | -.0126 | -.0568 | .0185  | .0998  | .2097  | .1233  | -.1212 | -.3375 | -.2439 |        |        |
| 90.000  | .0377  | -.0035 | .0885  | .1229  | .2870  | .1840  | -.1554 |        |        |        |        |
| 105.000 |        |        | .1505  | .1360  | -.1239 | -.2181 | -.2073 |        |        |        |        |
| 110.000 |        |        |        |        |        |        |        |        |        |        |        |
| 120.000 | .0550  | .0694  | .2184  | .2291  | -.5120 | -.3160 | -.2992 |        |        |        |        |
| 135.000 |        |        | .3050  | .4593  | -.3633 | -.2694 | -.2590 |        |        |        |        |
| 150.000 | .0718  | .1251  | .3287  | .5162  | -.2423 | -.2450 | -.2571 |        |        |        |        |
| 165.000 | .0704  | .3290  |        |        | -.0404 | -.2106 | -.2043 |        |        |        |        |
| 180.000 | .0694  | .1411  | .3329  | .5495  |        |        |        |        |        |        |        |

ALPHA ( 1 ) = -4.042 BETA ( 3 ) = 4.289 MACH = .90000 Q = 600.22 P = 1058.5 RN/L = 3.5693

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | 0.000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3730  | .4970  | .5740  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     | 1.1749 | .3346  | -.0869 | -.1041 | -.1899 | -.2198 | -.2174 | -.2333 | -.2453 | -.2396 | -.1801 | -.0772 | -.0287 | .0056  | -.0184 |
| 20.000  | -.0831 | -.1397 | -.2281 | -.2281 | -.2198 | -.2174 | -.2333 | -.2453 | -.2396 | -.1801 | -.0772 | -.0287 | .0056  | -.0184 |        |
| 40.000  | .0300  | -.0300 | -.1421 | -.2096 | -.1999 | -.2774 | -.2774 | -.3068 | -.3068 | -.2987 | -.0484 | -.0093 | .0009  | .0109  |        |
| 55.000  | .1398  | -.0585 | -.1317 | -.1705 | -.2691 | -.2691 | -.3807 | -.3807 | -.3807 | -.3807 | -.0860 | .0468  | .0754  |        |        |
| 70.000  | .2206  | -.0051 | -.0723 | -.0956 | -.2513 | -.2513 | -.3973 | -.3973 | -.3973 | -.3973 | -.0860 | .0468  | .0754  |        |        |
| 90.000  | .2975  | .0547  | -.0037 | -.0830 | -.2617 | -.2617 | -.5834 | -.5834 | -.5834 | -.5834 | -.1964 | .0439  | .0569  |        |        |
| 120.000 | .4132  | .2288  | .0987  | .1161  | -.0690 | -.0690 | -.5912 | -.5912 | -.5912 | -.5912 | -.2402 | -.0136 | .0170  |        |        |

$$\text{ALPHA} (1) = -4.042 \quad \text{BETA} (3) = 4.289$$

AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

(12883X)

| SECTION ( 1 ) ORBITER FUSELAGE |        |       |       |       |       |       |       |       |       | DEPENDENT VARIABLE CP |        |        |        |        |       |
|--------------------------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-----------------------|--------|--------|--------|--------|-------|
| X/LB                           | .0000  | .0080 | .0230 | .0450 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040                 | .2510  | .3010  | .3780  | .4970  | .5740 |
| PHI                            |        |       |       |       |       |       |       |       |       |                       |        |        |        |        |       |
| 140.000                        |        |       |       |       |       |       |       |       |       |                       |        |        |        |        |       |
| 150.000                        |        |       |       |       |       |       |       |       |       |                       |        |        |        |        |       |
| 151.000                        |        |       |       |       |       |       |       |       |       |                       |        |        |        |        |       |
| 162.000                        |        |       | .5119 | .4033 | .2936 | .3029 |       | .4748 |       | -.8052                |        |        |        |        |       |
| 165.000                        |        |       |       |       |       |       |       |       | .1095 | -.8762                | -.8540 | -.0349 | -.0032 | -.0203 |       |
| 169.000                        |        |       |       |       |       |       |       |       | .2168 |                       |        |        |        |        |       |
| 174.000                        |        |       |       |       |       |       |       |       |       | -.8514                | -.7463 | -.0096 | .0009  | .0274  |       |
| 183.000                        | 1.1749 | .8038 | .5857 | .4640 | .3791 | .4126 | .7527 | .6314 |       |                       |        |        |        |        |       |
|                                |        |       |       |       |       |       |       | .6557 |       | -.9395                | -.7667 | -.0167 | .0065  | -.0295 |       |

[illegible][illegible]

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/R/C/R ORB FUSELAGE

(XEB821)

ALPHA ( 2 ) = .024 BETA ( 1 ) = -3.875

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

180.000 1.2037 .7090 .4560 .3571 .2818 .3290 .5818 -1.0535 -.8666 -.0691 .0099 .0018

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.0378 -.0840 -.1525 -.2758 -.3883 -.4432 -.3391 -.4776 -.2974

.0932 -.1380 -.2635 -.3437 -.4070 -.3448 -.3882 -.2857

.1129 -.2237 -.0134 .1387 -.0782 -.0295 -.0672

.0731 -.1423 .0589 .1721 -.1474 -.0951 -.1140

.105.000 .1277 .2220 -.2452 -.1422 -.1615

.110.000 .2463 .2825 -.4046 -.2065 -.1905

.125.000 .3093 .3522 -.2819 -.1596 -.1962

.135.000 .0129 .0643 .3063 .2882 -.2230 -.1417 -.2133

.150.000 .0063 .2803 .0389 -.1165 -.1951

.180.000 .0083 .0748 .2652 .4091

ALPHA ( 2 ) = .031 BETA ( 2 ) = .185 MACH = .89317 Q = 599.08 P = 1058.5 RN/L = 3.5682

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.2112 .5210 .0770 .0017 -.0799 -.1573 -.1670 -.1827 -.0627 -.0175 .0283 .0278

.20.000 .0995 -.0124 -.1088 -.1420 -.1696 -.1784

.40.000 .2352 .0082 -.0738 -.1079 -.1887 -.2138 -.2769 -.0576 -.0082 .0153 .0406

.50.000 .3359 .1139 .0307 -.0353 -.1410 -.2379

.70.000 .3854 .1582 .0631 .0236 -.1228 -.2502 -.7275 -.0868 .0039 .0388

.90.000 .4317 .2002 .0931 .0553 -.1036 -.3772 -.7153 -.1139 .0084 .0395

.120.000 .4809 .3051 .1964 .2168 .0976 .4085 -.6843 -.2188 .0112 .0275

.140.000 .4912 .3696 .2713 .3078 .5495 -.4922 -.9488 -.1732 .0233 .0155

.150.000 .51.000 .2743

.160.000 .6459

.180.000 .7704

.190.000 .6256

.197.000 .9990 1.0180 1.0460

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.0395 -.0825 -.1535 -.2747 -.3977 -.4003 -.3243

.40.000 .0678 -.1408 -.2597 -.3506 -.3920 -.3288

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8821)

ALPHA ( 2 ) = .031 BETA ( 2 ) = .186

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0150 | 1.0460 |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |       |        |        |        |        |        |        |
| 70.000  | -.1221 | -.2310 | -.0496 | .0748 | -.2425 | -.1221 | -.1156 |        |        |        |
| 90.000  | -.0766 | -.1412 | .0244  | .0953 | -.3054 | -.1604 | -.1476 |        |        |        |
| 105.000 |        |        | .0981  | .1264 | -.4393 | -.2039 | -.1966 |        |        |        |
| 110.000 |        |        |        |       |        |        |        | -.2820 |        |        |
| 120.000 | -.0291 | -.0188 | .1691  | .2398 | -.5008 | -.2872 | -.2598 | -.2226 |        |        |
| 135.000 |        |        | .2439  | .3979 | -.3911 | -.2671 | -.2481 |        |        |        |
| 150.000 | -.0030 | .0564  | .2676  | .4487 | -.2977 | -.2616 | -.2563 |        |        |        |
| 165.000 | .0048  |        | .2690  |       | -.1057 | -.2607 | -.1976 |        |        |        |
| 180.000 | .0011  | .0741  | .2732  | .4838 |        |        |        |        |        |        |

ALPHA ( 2 ) = .021

BETA ( 3 ) = .4265

MACH = .89917

Q =

599.08

P =

.058.5

RV/

= 3.5682

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770   | .2040  | .2510  | .3010  | .3780 | .4970 | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|-------|-------|-------|
| PHI     |        |        |        |        |        |        |        |        |         |        |        |        |       |       |       |
| 000     |        |        | .0654  | -.0039 | -.0885 | -.1417 |        | -.1517 | -.1751  | -.1731 | -.0756 | -.0171 | .0270 | .0228 |       |
| 20.000  | 1.1950 | .5034  | .0690  | -.0234 | -.1162 | -.1136 |        | -.1611 | -.1839  | -.2027 | -.0508 | .0014  | .0191 | .0569 |       |
| 40.000  |        |        | .1538  | -.0154 | -.0994 | -.0716 |        | -.1701 | -.2078  | -.2733 |        |        |       |       |       |
| 55.000  |        |        | .2202  | .0341  | -.0376 | -.0716 |        | -.1767 | -.2738  | -.3252 | -.0847 | .0099  | .0393 |       |       |
| 70.000  |        |        | .2642  | .0573  | -.0260 | -.0369 |        | -.1814 | -.4945  | -.7830 | -.1328 | .0180  | .0322 |       |       |
| 90.000  |        | .4170  | .3104  | .0897  | -.0132 | -.0251 |        | -.1845 | -.5596  | -.7796 | -.2276 | .0123  | .0187 |       |       |
| 120.000 |        |        | .3811  | .2077  | .0897  | .1350  |        | -.0180 | -.7479  |        |        |        |       |       |       |
| 140.000 |        |        | .4277  | .3284  | .2174  | .2599  |        | .4573  | -.9179  | -.9632 | -.1119 | .0153  | .0063 |       |       |
| 151.000 |        |        |        |        |        |        |        |        | .0972   | .1862  |        |        |       |       |       |
| 162.000 |        |        |        |        |        |        |        |        |         | -.8726 | -.8535 | -.0747 | .0130 | .0100 |       |
| 165.000 |        |        |        |        |        |        |        |        |         |        |        |        |       |       |       |
| 169.000 |        |        |        |        |        |        |        |        |         |        |        |        |       |       |       |
| 174.000 |        |        |        |        |        |        |        |        |         |        |        |        |       |       |       |
| 180.000 | 1.1950 | .6864  | .4741  | .3620  | .2901  | .3390  | .7148  |        | -.10521 | -.8648 | -.0759 | .0142  | .0055 |       |       |
|         | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180  | 1.0460 |        |        |       |       |       |
| X/LB    |        |        |        |        |        |        |        |        |         |        |        |        |       |       |       |
| PHI     |        |        |        |        |        |        |        |        |         |        |        |        |       |       |       |
| 000     |        |        | -.1496 | -.2657 | -.3765 | -.4369 | -.3216 |        | -.4597  | -.2878 |        |        |       |       |       |
| 40.000  | -.0342 | -.0803 | -.1392 | -.2530 | -.3672 | -.4168 | -.2599 |        | -.3207  | -.1962 |        |        |       |       |       |
| 70.000  | -.0472 |        | -.0633 | .0298  | -.3148 | -.2590 | -.1500 |        |         |        |        |        |       |       |       |
| 90.000  | -.1156 | -.1888 | -.0633 | .0298  | -.3148 | -.2590 | -.1500 |        |         |        |        |        |       |       |       |
| 105.000 | -.0678 | -.1217 | .0031  | .0331  | -.3949 | -.3946 | -.1715 |        |         |        |        |        |       |       |       |
| 120.000 |        |        | .0648  | .0455  | -.5155 | -.5052 | -.1941 |        |         |        |        |        |       |       |       |
| 140.000 |        |        |        |        |        |        |        | -.2727 |         |        |        |        |       |       |       |
| 162.000 | -.0242 | -.0218 | .1229  | .0947  | -.6406 | -.6115 | -.2207 |        |         |        |        |        |       |       |       |
| 174.000 |        |        | .2156  | .3368  | -.5235 | -.5104 | -.5088 |        |         |        |        |        |       |       |       |
| 180.000 | .0020  | .0545  | .2489  | .4315  | -.4030 | -.4842 | -.3755 |        |         |        |        |        |       |       |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -14JA/B/C/R ORB FUSELAGE

(XE8B21)

ALPHA ( 2 ) = .021 BETA ( 3 ) = 4.265

## SECTION ( 1 ) ORBITTER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 .0039 .2528  
180.000 -.0010 .0762 .2748 .4306  
- .1819 -.4095 -.1965

ALPHA ( 3 ) = 3.922 BETA ( 1 ) = -3.878 MACH = .89950 Q = 599.38 P = 1058.3 RN/L = 3.5682

## SECTION ( 1 ) ORBITTER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.200 1.1967 .6883 .2180 .0973 .0116  
.2000 .2610 .1085 -.0041 -.0689  
40 000 .4187 .1621 .0643 -.0070  
55 000 .5008 .2773 .1769 .0921  
70 000 .5225 .2951 .1885 .1328  
90 000 .5274 .3124 .1968 .1582  
120 000 .4975 .3293 .2234 .2558  
140 000 .4191 .2901 .2139 .2705  
161 000  
162 000  
165 000  
169 000  
174 000  
180 000

.2771

.3053

1.1967 .5709 .3367 .2604 .1966 .2631 .7396 .6379 .5402

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .0518 -.0010 .0827 .2084 .3033 .3752 .5179  
40 000 .0275 .0625 .1888 .2700 .3421 .3958  
70 000 .2222 .4473 .0965 .1153 .0603 .0239 .0612  
90 000 .1700 .3506 .0023 .1443 .1131 .0764 .1004  
105 000 .0963 .1548 .2141 .1360 .1572  
116 000  
120 000 .1885 .1655 .2114 .1562 .3623 .2017 .1687  
135 000 .2613 .2233 .3445 .1812 .1847  
150 000 .3901 .0039 .2460 .1737 .2655 .1687 .2095  
165 000 .0756 .2164  
180 000 .0063 .1956 .3423  
- .2706  
- .1971REPRODUCIBILITY OF THE  
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## TABULATED PRESSURE DATA - OA148 ( AMES 11-073-1 )

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AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

(XE8821)

ALPHA ( 3 ) = 3.975 BETA ( 2 ) = .198 MACH = .89950 Q = 599.38 P = 1058.3 RN/L = 3.5682

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460  | .0700  | .1120 | .1580 | .1660  | .1770   | .2040   | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|--------|-------|--------|--------|-------|-------|--------|---------|---------|--------|--------|--------|-------|-------|
| PHI     | .000   | 1.2020 | .6738 | .2245  | .1119  | .0169 |       | -.0864 | -.1030  | -.1268  | -.0581 | .0107  | .0756  | .0853 |       |
| 20.000  |        | .2471  | .1047 | -.0022 | -.0638 |       |       | -.0923 | -.1187  | -.1309  | -.0461 | .0223  | .0607  | .1115 |       |
| 40.000  |        | .3494  | .1358 | .0380  | -.0106 |       |       | -.0824 | -.1309  | -.1852  |        |        |        |       |       |
| 55.000  |        | .3904  | .1871 | .0962  | .0306  |       |       | -.0682 | -.1559  |         |        |        |        |       |       |
| 70.000  |        | .3989  | .1892 | .0929  | .0599  |       |       | -.0757 | -.1980  | -.6515  | -.1528 | -.0297 | .0169  |       |       |
| 90.000  |        | .5398  | .2058 | .0929  | .0805  |       |       | -.0554 | -.3078  | -.7080  | -.1739 | -.0231 | .0070  |       |       |
| 120.000 |        | .4163  | .2543 | .1447  | .2012  |       |       | .1199  | -.3805  | -.6877  | -.2849 | -.0198 | -.0149 |       |       |
| 140.000 |        |        |       |        |        |       |       |        | -.5012  |         |        |        |        |       |       |
| 150.000 |        | .3801  | .2816 | .1826  | .2534  |       |       | .5194  | -.8709  | -.10307 | -.3824 | .0458  | .0036  |       |       |
| 162.000 |        |        |       |        |        |       |       |        | .1889   |         |        |        |        |       |       |
| 165.000 |        |        |       |        |        |       |       |        | .2414   |         |        |        |        |       |       |
| 174.000 |        |        |       |        |        |       |       |        |         | -.9693  | -.9281 | -.2432 | .0427  | .0080 |       |
| 180.000 | 1.2020 | .5624  | .3544 | .2688  | .1978  | .2759 | .7202 | .5797  | -1.0117 | -.9368  | -.1696 | .0394  | .0088  |       |       |
| X/LB    | .6520  | .7290  | .7790 | .8210  | .8790  | .9210 | .9600 | .9990  | 1.0180  | 1.0460  |        |        |        |       |       |

## PHI

|         |        |        |        |        |        |        |        |        |        |        |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|--|--|--|--|
| .000    | .0536  | .0052  | -.0708 | -.2024 | -.2947 | -.3654 | -.5082 |        | -.4741 | -.2819 |  |  |  |  |  |
| 40.000  | .0428  | -.0569 | -.1855 | -.1855 | -.2813 | -.3422 | -.4085 |        | -.3654 | -.2164 |  |  |  |  |  |
| 70.000  | -.2310 | -.4402 | -.1110 | .0503  | -.1727 | -.0894 | -.0994 |        |        |        |  |  |  |  |  |
| 90.000  | -.1736 | -.3300 | -.0300 | .0557  | -.2744 | -.1477 | -.1317 |        |        |        |  |  |  |  |  |
| 105.000 |        |        | .0496  | .0617  | -.3965 | -.1948 | -.1843 |        |        |        |  |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        | -.2724 |        |        |  |  |  |  |  |
| 120.000 | -.1269 | -.1362 | .1153  | .1725  | -.5236 | -.2736 | -.2268 | -.1974 |        |        |  |  |  |  |  |
| 130.000 |        |        | .1717  | .3831  | -.4274 | -.2435 | -.2346 |        |        |        |  |  |  |  |  |
| 140.000 | -.0505 | -.0170 | .1919  | .4641  | -.3477 | -.2606 | -.2441 |        |        |        |  |  |  |  |  |
| 165.000 | -.0505 |        | .1945  |        | -.1532 | -.2706 | -.1860 |        |        |        |  |  |  |  |  |
| 180.000 | -.0547 | -.0044 | .2055  | .4318  |        |        |        |        |        |        |  |  |  |  |  |

ALPHA ( 3 ) = 3.972 BETA ( 3 ) = 4.260 MACH = .89950 Q = 599.38 P = 1058.3 RN/L = 3.5682

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230 | .0460  | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780 | .4970 | .5740 |
|---------|-------|--------|-------|--------|--------|--------|-------|--------|--------|--------|--------|--------|-------|-------|-------|
| PHI     | .000  | 1.1849 | .6507 | .2070  | .1031  | .0027  |       | -.0884 | -.1146 | -.1418 | -.0671 | .0025  | .0620 | .0738 |       |
| 20.000  |       | .2010  | .0774 | -.0265 | -.0719 |        |       | -.1016 | -.1305 | -.1305 |        |        |       |       |       |
| 40.000  |       | .2535  | .0801 | -.0056 | -.0410 |        |       | -.028  | -.1487 | -.2127 | -.0965 | .0060  | .0423 | .1041 |       |
| 55.000  |       | .2724  | .0820 | .0077  | -.0275 |        |       | -.1242 | -.2029 |        |        |        |       |       |       |
| 70.000  |       | .2760  | .0710 | -.0054 | -.0123 |        |       | -.1417 | -.2601 | -.7234 | -.1441 | -.0319 | .0208 |       |       |
| 90.000  |       | .3807  | .2974 | .0919  | .0005  | -.0010 |       | -.1332 | -.4115 | -.7929 | -.1766 | -.0130 | .0051 |       |       |
| 120.000 |       | .3232  | .1629 | .0613  | .1236  |        |       | .0170  | -.5222 | -.7776 | -.2843 | .0157  | .0043 |       |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8821)

ALPHA ( 3 ) = 3.972 BETA ( 3 ) = 4.260

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 163.000 |       |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 1.1849  | .5395 | .3514 | .2476 | .1855 | .2625 | .6664 |       | .5541 |        |        |       |       |       |       |       |
| .6520   | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 |       | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |

X/LB

PHI

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 163.000 |       |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 1.1849  | .5395 | .3514 | .2476 | .1855 | .2625 | .6664 |       | .5541 |        |        |       |       |       |       |       |
| .6520   | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 |       | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |

ALPHA ( 4 ) = 7.906 BETA ( 1 ) = -3.870 MACH = .89943 Q = 599.41 P = 1758.5 RN/L = 3.5684

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 163.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 1.1590  | .9016 | .3577 | .2155 | .1169 | .0233 |       |       |       |       |       |       |       |       |       |       |
| .2013   | .2913 | .1862 | .1147 | .2019 |       |       |       |       |       |       |       |       |       |       |       |

.7005

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 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8821)

ALPHA ( 4 ) = 7.906 BETA ( 1 ) = -3.870

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 180.000 | 1.1590 | .4185  | .2103  | .1618  | .1119  | .1997  |        | .4964  |        | -.9719 | -.7206 | -.4884 | -.1122 | -.0003 |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| .000    | .1305  | .0802  | -.0051 | -.1327 | -.2118 | -.3558 | -.4919 |        | -.4750 | -.2939 |        |        |        |        |       |
| 40.000  | .1369  |        | .0205  | -.1121 | -.2140 | -.3108 | -.4640 |        | -.3996 | -.2359 |        |        |        |        |       |
| 70.000  | -.3086 | -.5766 | -.1378 | .0845  | -.0993 | -.0784 | -.0850 |        |        |        |        |        |        |        |       |
| 90.000  | -.2522 | -.4854 | -.0566 | .0691  | -.1373 | -.1325 | -.1329 |        |        |        |        |        |        |        |       |
| 105.000 |        |        | .0537  | .0725  | -.2273 | -.1901 | -.1816 |        |        |        |        |        |        |        |       |
| 110.000 |        |        |        |        |        |        |        | -.2566 |        |        |        |        |        |        |       |
| 120.000 | -.3062 | -.2624 | .0938  | .0722  | -.3458 | -.2470 | -.1905 |        |        |        |        |        |        |        |       |
| 135.000 |        |        | .0987  | .1929  | -.3608 | -.2160 | -.2203 |        |        |        |        |        |        |        |       |
| 150.000 | -.1539 | -.1058 | .0985  | .2661  | -.3022 | -.1981 | -.2197 |        |        |        |        |        |        |        |       |
| 165.000 | -.1281 |        | .0947  |        | -.0651 | -.1614 | -.1977 |        |        |        |        |        |        |        |       |
| 180.000 | -.1253 | -.0777 | .1071  | .3122  |        |        |        |        |        |        |        |        |        |        |       |

ALPHA ( 4 ) = 8.017 BETA ( 2 ) = .186 MACH = .89943 Q = 599.41 P = 1058.5 RN/L = 3.5634

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040    | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|-------|--------|--------|--------|--------|--------|--------|--------|----------|--------|--------|--------|-------|-------|
| PHI     |        |       |        |        |        |        |        |        |        |          |        |        |        |       |       |
| .000    | 1.1684 | .8095 | .3670  | .2281  | .1251  |        |        | -.0025 | -.0312 | -.0612   | -.0145 | .0484  | .1199  | .1456 |       |
| 20.000  |        |       | .3806  | .2201  | .1059  | .0267  |        | -.0072 | -.0401 | -.0610   | -.0421 | .0477  | .1024  | .1754 |       |
| 40.000  |        |       | .4420  | .2391  | .1371  | .0707  |        | .0018  |        |          |        |        |        |       |       |
| 54.000  |        |       | .4276  | .2234  | .1326  | .0611  |        | -.0314 | -.1098 | -.1565   | -.2190 | -.0958 | -.0195 |       |       |
| 70.000  |        |       | .3947  | .1950  | .0743  | .0718  |        | -.0420 | -.2535 | -.6961   | -.2566 | -.0856 | -.0230 |       |       |
| 90.000  | .4871  |       | .3771  | .1694  | .0905  | .0831  |        | -.0231 | -.3601 | -.7127   | -.3312 | -.1164 | -.0559 |       |       |
| 120.000 |        |       | .3346  | .1671  | .0940  | .1666  |        | .1368  | -.5021 |          |        |        |        |       |       |
| 140.000 |        |       | .2726  | .1683  | .0985  | .1952  |        | .5019  | -.8448 | -.6396   | -.4662 | -.0222 | -.0118 |       |       |
| 150.000 |        |       |        |        |        |        |        |        | .1742  |          |        |        |        |       |       |
| 151.000 |        |       |        |        |        |        |        |        | .2058  |          |        |        |        |       |       |
| 162.000 |        |       |        |        |        |        |        | .5627  |        | -.1.0349 | -.6486 | -.4485 | .0236  | .0081 |       |
| 165.000 |        |       |        |        |        |        |        |        |        |          |        |        |        |       |       |
| 169.000 |        |       |        |        |        |        |        |        |        |          |        |        |        |       |       |
| 174.000 |        |       |        |        |        |        |        |        |        |          |        |        |        |       |       |
| 180.000 |        |       |        |        |        |        |        |        |        |          |        |        |        |       |       |
| X/LB    | .6520  | .7290 | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460   |        |        |        |       |       |
| PHI     |        |       |        |        |        |        |        |        |        |          |        |        |        |       |       |
| .000    | .1366  | .0849 | -.0007 | -.1287 | -.2033 | -.3456 | -.4832 |        | -.4634 | -.2922   |        |        |        |       |       |
| 40.000  | .1421  |       | .0218  | -.1036 | -.2210 | -.3054 | -.4780 |        | -.3615 | -.2285   |        |        |        |       |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8B21)

ALPHA ( 4 ) = 8.017 BETA ( 2 ) = .186

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .5520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

70.000 -.3082 -.6235 -.1884 .0109 -.2043 -.1569 -.1346  
 90.000 -.2484 -.4725 -.1230 .0172 -.2812 -.2119 -.1464  
 105.000 .05000 -.0153 .0059 -.3817 -.2626 -.2101  
 110.000  
 120.000 -.2119 -.2499 .0094 .0923 -.4955 -.4309 -.2302  
 135.000 .0863 .3018 -.4411 -.3313 -.2456  
 150.000 -.1345 -.1321 .1123 .4240 -.3609 -.3128 -.2418  
 165.000 -.1151 .1243 .1243 -.1712 -.3092 -.1812  
 180.000 -.1124 -.0777 .1367 .3944

ALPHA ( 4 ) = 8.014 BETA ( 3 ) = 4.257 MACH = .89943 Q = 599.41 P = 1058.5 RVL = 3.5684

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

1.1523 .7904 .3508 .2176 .1072 .0743 .0129  
 20.000 .3356 .1821 .0743 .0129  
 40.000 .3377 .1681 .0773 .0175  
 55.000 .2986 .1115 .0345 -.0167  
 70.000 .2722 .0845 -.0037 .0046  
 90.000 .2695 .0845 -.0025 .0171  
 120.000 .2574 .1131 .0259 .1176  
 140.000 .2310 .1534 .0622 .1616  
 160.000  
 180.000  
 1.1523 .3640 .2350 .1582 .0977 .1999 .6250  
 .5520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.1299 .0765 .0072 .1382 .2104 .3486 .4898  
 .1338 .0108 .1112 .2295 .3276 .4666  
 .3159 .5863 .0570 .2785 .2531 .1697  
 .2459 .4514 .1762 .3594 .3317 .1859  
 .1034 .0508 .4699 .4603 .2290  
 110.000  
 120.000  
 135.000  
 150.000  
 165.000  
 180.000

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (XE0821)

ALPHA ( 4 ) = 8.014 BETA ( 3 ) = 4.257

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6320 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 -.1136 .1138  
180.000 -.1253 -.0924 .1072 .3575  
- .2384 -.4594 -.1933

ALPHA ( 5 ) = 11.899 BETA ( 1 ) = -3.861 MACH = .90017 Q = 600.39 P = 1058.5 RN/L = 3.5727

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.0992 .9217 .4978 .3359 .2214 .1320 .0748 .0493 .0172 .0411 .0993 .1790 .2119  
20.000 .5422 .3567 .2278 .1320 .0786 .0489 .0489 .0489  
40.000 .6153 .3995 .2810 .1925 .1152 .0574 .0574 .0574 .0081 .0645 .1113 .1785 .2358  
55.000 .5654 .3638 .2470 .1548 .0576 .0162 .0162 .0162 .0607 .0607 .0607 .0607 .0607  
70.000 .4898 .3019 .1822 .1506 .0469 .0469 .0469 .0469 .0469 .0469 .0469 .0469 .0469  
90.000 .5581 .4286 .2522 .1595 .1409 .1409 .1409 .1409 .1409 .1409 .1409 .1409 .1409  
120.000 .2991 .1512 .0571 .1421 .1865 .1865 .1865 .1865 .1865 .1865 .1865 .1865 .1865  
140.000 .1400 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
150.000 .1643 .0847 .0197 .1449 .5601 .5601 .5601 .5601 .5601 .5601 .5601 .5601 .5601  
162.000 .1620 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
165.000 .1650 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
174.000 .1740 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
180.000 1.0992 .2619 .0962 .0746 .0273 .1485 .6600 .5636 .8307 .5727 .5581 .2162 .0477

X/LB

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .2095 .1540 .0718 .0535 .1540 .3144 .4446 .5441 .3715  
40.000 .2352 .1039 .1039 .0277 .1946 .2669 .4612 .4523 .2657  
70.000 .4449 .7229 .1702 .0052 .2463 .1974 .1453 .1453 .1453  
93.000 .3471 .5738 .0542 .0360 .2623 .2542 .1731 .1731 .1731  
105.000 .0137 .0851 .0851 .0851 .3259 .2952 .2282 .2282 .2282  
110.000 .1100 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
120.000 .3657 .2533 .0029 .1405 .3826 .4029 .2277 .2277 .2277  
135.000 .0038 .0038 .0038 .0038 .0038 .0038 .0038 .0038 .0038  
150.000 .2526 .2222 .0015 .2850 .3447 .3021 .2534 .2534 .2534  
165.000 .2101 .0221 .0221 .0221 .1213 .2152 .1972 .1972 .1972  
180.000 .1633 .1128 .0753 .3449 .3449 .3449 .3449 .3449 .3449

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE (XE9B21)

|               |        |              |      |      |   |        |   |   |        |   |   |        |      |   |        |
|---------------|--------|--------------|------|------|---|--------|---|---|--------|---|---|--------|------|---|--------|
| ALPHA ( 5 ) = | 11.956 | BETA ( 2 ) = | .190 | MACH | = | .90017 | Q | = | 600.39 | P | = | 1058.5 | RN/L | = | 3.5727 |
|---------------|--------|--------------|------|------|---|--------|---|---|--------|---|---|--------|------|---|--------|

SECTION ( ) ORBITER FUSELAGE

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| .000    | 1.1070 | .9291 | .5040 | .3483 | .2223 | .1207 | .0700 | .0700 | .0523 | .0256 | .0507 | .1045 | .1835 | .2104 |       |
| 20.000  |        |       | .5139 | .3333 | .2076 | .1207 | .0658 | .0658 | .0327 | .0020 |       |       | .1575 | .2390 |       |
| 40.000  |        |       | .5181 | .3281 | .2006 | .1376 | .0670 | .0670 |       |       |       |       |       |       |       |
| 55.000  |        |       | .4372 | .2393 | .1394 | .0542 | .0252 | .0252 |       |       |       |       |       |       |       |
| 70.000  |        |       | .3653 | .1830 | .0767 | .0703 | .0231 | .0231 |       |       |       |       |       |       |       |
| 90.000  |        | .4117 | .3236 | .1480 | .0635 | .0729 | .0070 | .0070 |       |       |       |       |       |       |       |
| 120.000 |        |       | .2419 | .0942 | .0197 | .1232 | .1362 | .1362 |       |       |       |       |       |       |       |
| 140.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |        |       | .1575 | .0869 | .0164 | .1407 | .4843 | .4843 |       |       |       |       |       |       |       |
| 151.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 160.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 166.000 |        |       |       |       |       |       |       |       | .1631 |       |       |       |       |       |       |
| 167.000 |        |       |       |       |       |       |       |       | .1792 |       |       |       |       |       |       |

[illegible][illegible]

ALPHA (5) = 1.948      BETA (3) = 4.274      MACH = .90017      Q = 600.39      P = 1058.5      RM/L = 3.5727

SECTION - 10 CRITTER FUSelage

[illegible]

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8821)

ALPHA ( 5 ) = 11.948 BETA ( 3 ) = 4.274

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770          | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|----------------|--------|-------|-------|-------|-------|-------|
| PHI     |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 140.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 150.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 151.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 152.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 155.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 159.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 174.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 180.000 | 1.0304 | .2184  | .1143  | .0797  | .0133  | .1464  | .5841  | .4825  | .0656<br>.1035 |        |       |       |       |       |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180         | 1.0460 |       |       |       |       |       |
| PHI     |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 140.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 150.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 151.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 152.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 155.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 159.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 174.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 180.000 | .2105  | .1578  | .0717  | -.0601 | -.1583 | -.3151 | -.4577 |        | -.5860         | -.3907 |       |       |       |       |       |
| X/LB    | .2105  | .2105  | .0913  | -.0417 | -.2057 | -.3147 | -.4589 |        | -.3710         | -.2309 |       |       |       |       |       |
| 140.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 150.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 151.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 152.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 155.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 159.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 174.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 180.000 | .2191  | -.2802 | -.0738 | .0067  | -.5256 | -.6176 | -.5584 | -.2645 |                |        |       |       |       |       |       |
| X/LB    | .2191  | -.2802 | .0323  | .2244  | -.4502 | -.5036 | -.5369 | -.2209 |                |        |       |       |       |       |       |
| 140.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 150.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 151.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 152.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 155.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 159.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 174.000 |        |        |        |        |        |        |        |        |                |        |       |       |       |       |       |
| 180.000 | -.1722 | -.1273 | .0607  | .3235  | -.2053 | -.4200 | -.2003 |        |                |        |       |       |       |       |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

( 05 AUG 75 )

## REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO  
 LREF = 474.8000 IN. YMRP = .0000 IN. YO  
 BREF = 936.0680 IN. ZMRP = 375.0000 IN. ZO  
 SCALE = .0300

ALPHA (  $\alpha$  ) = -4.045 BETA (  $\beta$  ) = -7.856 MACH = .56680 Q = 594.79 P = 2385.6 RN/L = 4.6530

## SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040   | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |         |        |        |        |        |        |
| .000    | 1.0044 | .1299  | -.2236 | -.2189 | -.2299 |        |        | -.1866 | -.1555 | -.1291  | -.1024 | -.0831 | -.0575 | -.0816 |        |
| 20.000  |        |        | -.2066 | -.2373 | -.2926 | -.2926 |        | -.2465 | -.2093 | -.3356  | -.2734 | -.2011 | -.1755 | -.1559 | -.1464 |
| 40.000  |        |        | .0169  | -.2245 | -.3049 | -.3166 |        | -.3816 | -.1701 |         |        |        |        |        |        |
| 50.000  |        |        | .2748  | .0544  | -.0225 | -.1226 |        | -.1491 | -.1291 | -.1395  | -.0075 | .0579  | .0553  |        |        |
| 70.000  |        |        | .6415  | .2383  | .1415  | .0847  |        | -.0520 | -.1786 | -.1607  | -.0426 | .0382  | .0798  |        |        |
| 90.000  |        | .7386  | .5486  | .3356  | .2307  | .1375  |        | -.0134 | -.1470 | -.1852  | -.1713 | .0046  | .0369  |        |        |
| 120.000 |        |        | .6185  | .4604  | .3444  | .3183  |        | .1906  | -.1961 |         |        |        |        |        |        |
| 140.000 |        |        | .5047  | .4253  | .3463  | .3451  |        | .5625  | -.2451 | -.3615  | -.3181 | -.1056 | -.0369 | -.0389 |        |
| 150.000 |        |        |        |        |        |        |        |        | .2493  |         |        |        |        |        |        |
| 151.000 |        |        |        |        |        |        |        | .5692  |        | -.9443  | -.2491 | -.1317 | -.0597 | -.0255 |        |
| 162.000 |        |        |        |        |        |        | .6983  |        |        |         |        |        |        |        |        |
| 165.000 | 1.0044 | .7042  | .4342  | .3403  | .2694  | .2839  |        | .3571  |        | -1.1815 | -.2342 | -.1412 | -.0760 | -.0444 |        |
| 169.000 |        |        |        |        |        |        | .9600  | .9990  | 1.0180 | 1.0460  |        |        |        |        |        |
| 174.000 | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  |        |        |        |         |        |        |        |        |        |
| 190.000 |        |        |        |        |        |        |        |        |        |         |        |        |        |        |        |
| PHI     |        |        |        |        |        |        |        |        |        |         |        |        |        |        |        |
| .000    | -.1258 | -.1509 | -.1978 | -.2540 | -.2510 | -.3057 | -.3311 |        | -.3451 | -.2411  |        |        |        |        |        |
| 40.000  | -.2221 | -.2062 | -.2062 | -.2565 | -.2277 | -.2561 | -.2861 |        | -.3101 | -.2812  |        |        |        |        |        |
| 70.000  | .0143  | -.0048 | .0713  | .1743  | .0323  | .0084  | -.0744 |        |        |         |        |        |        |        |        |
| 90.000  | .0400  | .0366  | .1233  | .3208  | -.0131 | -.0535 | -.1199 |        |        |         |        |        |        |        |        |
| 105.000 |        |        | .1653  | .3332  | -.0943 | -.0977 | -.1633 |        |        |         |        |        |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.2872 |        |         |        |        |        |        |        |
| 120.000 | .0282  | .0817  | .2411  | .4990  | -.1439 | -.1299 | -.1519 | -.2011 |        |         |        |        |        |        |        |
| 135.000 |        |        | .2876  | .4704  | -.1152 | -.0842 | -.1508 |        |        |         |        |        |        |        |        |
| 150.000 | .0173  | .0829  | .2650  | .5242  | -.1086 | -.0733 | -.1469 |        |        |         |        |        |        |        |        |
| 165.000 | -.0024 |        | .2132  |        | .1371  | -.0342 | -.1603 |        |        |         |        |        |        |        |        |
| 181.000 | -.0321 | .0358  | .1653  | .3148  |        |        |        |        |        |         |        |        |        |        |        |

## PARAMETRIC DATA

RUDDER = .000 SPOBRK = .000  
 BOFLAP = -11.700 L-ELVN = .000  
 R-ELVN = .000 MACH = .600

AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE (XEP822)

## SECTION ( ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580 | .1650  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |        |        |        |        |       |        |        |        |        |        |        |        |       |
| .000    | 1.0492 | .1734 | -.1869 | -.1850 | -.2044 |        |       | -.1650 | -.1392 | -.1137 | -.0833 | -.0633 | -.0523 | -.0571 |       |
| 20.000  |        |       | -.1730 | -.1996 | -.2471 | -.2433 |       | -.2024 | -.1727 |        |        |        |        |        |       |
| 40.000  |        |       | .0102  | -.1944 | -.2642 | -.2608 |       | -.3039 | -.2691 | -.2070 | -.1421 | -.1171 | -.1055 | -.1072 |       |
| 55.000  |        |       | .2008  | .0039  | -.0622 | -.1441 |       | -.1832 | -.2034 | -.2034 |        |        |        |        |       |
| 70.000  |        |       | .3330  | .1335  | .0540  | .0047  |       | -.1219 | -.1892 | -.1810 | -.0424 | .0284  | .0735  |        |       |
| 90.000  | .6037  |       | .4309  | .2209  | .1188  | .0396  |       | -.1029 | -.2691 | -.2199 | -.0780 | .0080  | .0606  |        |       |
| 120.000 |        |       | .5247  | .3677  | .2549  | .2349  |       | .0801  | -.2724 | -.2332 | -.2036 | -.0115 | .0320  |        |       |
| 140.000 |        |       |        |        |        |        |       |        | -.4157 | -.2766 | -.0910 | -.0241 | .0159  |        |       |
| 150.000 |        |       | .5374  | .4111  | .3271  | .3266  |       | .5015  |        |        |        |        |        |        |       |

## PHI

[illegible]

## SECTION 11 ORBITER FUSLAGE

## DEPENDENT VARIABLE CP

| PHI     | X/LB   | .0000 | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1650  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 20.000  | 1.0574 | .1785 | -.1766 | -.1777 | -.2035 | -.2149 | -.1590 | -.1795 | -.1754 | -.1320 | -.1126 | -.0767 | -.0524 | -.0405 | -.0638 |       |
| 20.030  |        |       | -.1615 | -.1819 | -.2292 | -.2203 | -.1795 | -.1754 | -.1514 | -.1514 |        |        |        |        |        |       |
| 40.000  |        |       | -.0194 | -.1871 | -.2335 | -.2203 | -.2474 | -.2474 | -.2172 | -.2172 | -.1564 | -.0915 | -.0713 | -.0713 | -.0766 |       |
| 55.000  |        |       | -.1199 | -.1039 | -.1089 | -.1169 | -.2072 | -.2072 | -.2205 | -.2205 |        |        |        |        |        |       |
| 70.000  |        |       | -.2249 | -.3329 | -.0347 | -.0712 | -.1897 | -.1897 | -.2470 | -.2470 | -.2229 | -.0698 | .0097  | .0518  |        |       |
| 90.000  | .4502  |       | -.3053 | -.0523 | .0110  | -.0567 | -.1968 | -.1968 | -.3525 | -.3525 | -.2680 | -.1032 | -.0115 | .0386  |        |       |
| 120.000 |        |       | .4138  | .2569  | .1451  | .1428  | -.0484 | -.0484 | -.3438 | -.3438 | -.2393 | -.0413 | .0394  | .0394  |        |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XE8822)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 1 ) = -3.957 BETA ( 3 ) = .169

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .230  | .0460 | .0700 | .1120 | .1580 | .1660 | .1770   | .2040  | .2510  | .3010  | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|---------|--------|--------|--------|-------|-------|-------|
| PHI     |        |       |       |       |       |       |       |       |         |        |        |        |       |       |       |
| 140.000 |        |       |       |       |       |       |       |       |         |        |        |        |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |         |        |        |        |       |       |       |
| 151.000 |        |       |       |       |       |       |       |       |         |        |        |        |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |         |        |        |        |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |         |        |        |        |       |       |       |
| 169.000 |        |       |       |       |       |       |       |       |         |        |        |        |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |         |        |        |        |       |       |       |
| 180.000 | 1.0574 | .7219 | .4890 | .3962 | .3180 | .3313 | .6811 | .5092 | -1.1274 | -.1841 | -.0813 | -.0258 | .0163 |       |       |

Y

PHI

| X/LB    | .0000  | .0080 | .230  | .0460 | .0700 | .1120 | .1580 | .1660 | .1770   | .2040  | .2510  | .3010  | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|---------|--------|--------|--------|-------|-------|-------|
| 140.000 |        |       |       |       |       |       |       |       |         |        |        |        |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |         |        |        |        |       |       |       |
| 151.000 |        |       |       |       |       |       |       |       |         |        |        |        |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |         |        |        |        |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |         |        |        |        |       |       |       |
| 169.000 |        |       |       |       |       |       |       |       |         |        |        |        |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |         |        |        |        |       |       |       |
| 180.000 | 1.0574 | .7219 | .4890 | .3962 | .3180 | .3313 | .6811 | .5092 | -1.1274 | -.1841 | -.0813 | -.0258 | .0163 |       |       |

ALPHA ( 1 ) = -3.965 BETA ( 4 ) = 4.271 MACH = .59680 Q = 594.79 P = 2385.6 RV/L = 4.8530

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1590  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 140.000 |        |       |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 150.000 |        |       |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 151.000 |        |       |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 162.000 |        |       |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 165.000 |        |       |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 169.000 |        |       |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 174.000 |        |       |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 180.000 | 1.0383 | .1498 | -.1894 | -.1824 | -.2135 | -.2092 | -.2122 | -.1684 | -.1386 | -.1189 | -.0810 | -.0617 | -.0512 | -.0774 |       |

.6102

 REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS 100%

AMES 11-(  
(A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 1 ) = -3.965 BETA ( 4 ) = 4.271

SECTION ( ) ORBITER FUSELAGE

|       |       |       |       |       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| .0000 | .0370 | .0460 | .0700 | .1190 | .1880 | .2040 | .3010 | .3780 | .4570 | .5740 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|

| PHI | 180 000 | 1 0702 | 6937 | 4774 | 2766 | 2071 | 2106 | 4871 | -1.178 | -.1970 | -.0389 | -.0043 |
|-----|---------|--------|------|------|------|------|------|------|--------|--------|--------|--------|
|-----|---------|--------|------|------|------|------|------|------|--------|--------|--------|--------|

|     |      |        |        |        |        |        |        |        |        |
|-----|------|--------|--------|--------|--------|--------|--------|--------|--------|
|     | .000 | -.1194 | -.1905 | -.2582 | -.2501 | -.3107 | -.3378 | -.3459 | -.2295 |
| PW1 | .000 | -.1488 | -.1835 | -.2353 | -.2311 | -.2357 | -.2710 | -.2506 | -.1677 |

|         |   |      |   |      |   |      |   |      |   |      |
|---------|---|------|---|------|---|------|---|------|---|------|
| 110.000 | - | 0572 | - | 0779 | - | 4656 | - | 3181 | - | 2585 |
| 105.000 | - | 0230 | - | 0230 | - | 0359 | - | 3123 | - | 2975 |
| 110.000 | - | 0233 | - | 0230 | - | 0359 | - | 3123 | - | 2975 |

|               |        |              |       |      |   |        |   |   |        |   |   |        |      |   |        |
|---------------|--------|--------------|-------|------|---|--------|---|---|--------|---|---|--------|------|---|--------|
| ALPHA ( 1 ) = | -4.005 | BETA ( 5 ) = | 8.350 | MACH | = | .59680 | Q | = | 594.79 | P | = | 2385.6 | PR/L | = | 4.6530 |
|---------------|--------|--------------|-------|------|---|--------|---|---|--------|---|---|--------|------|---|--------|

SECTION (1) ORBITER FUSELAGE

|  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|  | .0000 | .0080 | .0270 | .0460 | .0700 | .1120 | .1590 | .1650 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|

[illegible][illegible][illegible]

|         |       |       |        |        |        |        |        |        |        |        |        |
|---------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 90.000  | .0968 | .0456 | -.1472 | -.2104 | -.2337 | -.3438 | -.4968 | -.3209 | -.1351 | -.0325 | .0191  |
| 120.000 |       | .1555 | -.0041 | -.1122 | -.1113 | -.3414 | -.5494 | -.4001 | -.3516 | -.1289 | -.0610 |

[illegible]

|         |         |         |         |         |         |
|---------|---------|---------|---------|---------|---------|
| 165.000 | - .9935 | - .2422 | - .1534 | - .0653 | - .0608 |
| 162.000 |         |         |         |         |         |
| 161.000 |         |         |         |         |         |
| 160.000 |         |         |         |         |         |
| 159.000 |         |         |         |         |         |
| 158.000 |         |         |         |         |         |
| 157.000 |         |         |         |         |         |
| 156.000 |         |         |         |         |         |
| 155.000 |         |         |         |         |         |
| 154.000 |         |         |         |         |         |
| 153.000 |         |         |         |         |         |
| 152.000 |         |         |         |         |         |
| 151.000 |         |         |         |         |         |
| 150.000 |         |         |         |         |         |
| 149.000 |         |         |         |         |         |
| 148.000 |         |         |         |         |         |
| 147.000 |         |         |         |         |         |
| 146.000 |         |         |         |         |         |
| 145.000 |         |         |         |         |         |
| 144.000 |         |         |         |         |         |
| 143.000 |         |         |         |         |         |
| 142.000 |         |         |         |         |         |
| 141.000 |         |         |         |         |         |
| 140.000 |         |         |         |         |         |
| 139.000 |         |         |         |         |         |
| 138.000 |         |         |         |         |         |
| 137.000 |         |         |         |         |         |
| 136.000 |         |         |         |         |         |
| 135.000 |         |         |         |         |         |
| 134.000 |         |         |         |         |         |
| 133.000 |         |         |         |         |         |
| 132.000 |         |         |         |         |         |
| 131.000 |         |         |         |         |         |
| 130.000 |         |         |         |         |         |
| 129.000 |         |         |         |         |         |
| 128.000 |         |         |         |         |         |
| 127.000 |         |         |         |         |         |
| 126.000 |         |         |         |         |         |
| 125.000 |         |         |         |         |         |
| 124.000 |         |         |         |         |         |
| 123.000 |         |         |         |         |         |
| 122.000 |         |         |         |         |         |
| 121.000 |         |         |         |         |         |
| 120.000 |         |         |         |         |         |
| 119.000 |         |         |         |         |         |
| 118.000 |         |         |         |         |         |
| 117.000 |         |         |         |         |         |
| 116.000 |         |         |         |         |         |
| 115.000 |         |         |         |         |         |
| 114.000 |         |         |         |         |         |
| 113.000 |         |         |         |         |         |
| 112.000 |         |         |         |         |         |
| 111.000 |         |         |         |         |         |
| 110.000 |         |         |         |         |         |
| 109.000 |         |         |         |         |         |
| 108.000 |         |         |         |         |         |
| 107.000 |         |         |         |         |         |
| 106.000 |         |         |         |         |         |
| 105.000 |         |         |         |         |         |
| 104.000 |         |         |         |         |         |
| 103.000 |         |         |         |         |         |
| 102.000 |         |         |         |         |         |
| 101.000 |         |         |         |         |         |
| 100.000 |         |         |         |         |         |
| 99.000  |         |         |         |         |         |
| 98.000  |         |         |         |         |         |
| 97.000  |         |         |         |         |         |
| 96.000  |         |         |         |         |         |
| 95.000  |         |         |         |         |         |
| 94.000  |         |         |         |         |         |
| 93.000  |         |         |         |         |         |
| 92.000  |         |         |         |         |         |
| 91.000  |         |         |         |         |         |
| 90.000  |         |         |         |         |         |
| 89.000  |         |         |         |         |         |
| 88.000  |         |         |         |         |         |
| 87.000  |         |         |         |         |         |
| 86.000  |         |         |         |         |         |
| 85.000  |         |         |         |         |         |
| 84.000  |         |         |         |         |         |
| 83.000  |         |         |         |         |         |
| 82.000  |         |         |         |         |         |
| 81.000  |         |         |         |         |         |
| 80.000  |         |         |         |         |         |
| 79.000  |         |         |         |         |         |
| 78.000  |         |         |         |         |         |
| 77.000  |         |         |         |         |         |
| 76.000  |         |         |         |         |         |
| 75.000  |         |         |         |         |         |
| 74.000  |         |         |         |         |         |
| 73.000  |         |         |         |         |         |
| 72.000  |         |         |         |         |         |
| 71.000  |         |         |         |         |         |
| 70.000  |         |         |         |         |         |
| 69.000  |         |         |         |         |         |
| 68.000  |         |         |         |         |         |
| 67.000  |         |         |         |         |         |
| 66.000  |         |         |         |         |         |
| 65.000  |         |         |         |         |         |
| 64.000  |         |         |         |         |         |
| 63.000  |         |         |         |         |         |
| 62.000  |         |         |         |         |         |
| 61.000  |         |         |         |         |         |
| 60.000  |         |         |         |         |         |
| 59.000  |         |         |         |         |         |
| 58.000  |         |         |         |         |         |
| 57.000  |         |         |         |         |         |
| 56.000  |         |         |         |         |         |

[illegible]

|       | 1980    | 1979  | 1978  | 1977  | 1976  |       |       |       |         |         |         |         |
|-------|---------|-------|-------|-------|-------|-------|-------|-------|---------|---------|---------|---------|
| Total | 180.000 | .9912 | .6220 | .4327 | .3242 | .2604 | .2743 | .3503 | -1.1336 | -1.5793 | -2.1377 | -3.7663 |
| Yield | 180.000 | .9912 | .6220 | .4327 | .3242 | .2604 | .2743 | .3503 | -1.1336 | -1.5793 | -2.1377 | -3.7663 |

|   | 0    | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35   | 36   | 37   | 38   | 39   | 40   | 41   | 42   | 43   | 44   | 45   | 46   | 47   | 48   | 49   | 50   | 51   | 52   | 53   | 54   | 55   | 56   | 57   | 58   | 59   | 60   | 61   | 62   | 63   | 64   | 65   | 66   | 67   | 68   | 69   | 70   | 71   | 72   | 73   | 74   | 75   | 76   | 77   | 78   | 79   | 80   | 81   | 82   | 83   | 84   | 85   | 86   | 87   | 88   | 89   | 90   | 91   | 92   | 93   | 94   | 95   | 96   | 97   | 98   | 99   |
|---|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 0 | 0000 | 0001 | 0002 | 0003 | 0004 | 0005 | 0006 | 0007 | 0008 | 0009 | 0010 | 0011 | 0012 | 0013 | 0014 | 0015 | 0016 | 0017 | 0018 | 0019 | 0020 | 0021 | 0022 | 0023 | 0024 | 0025 | 0026 | 0027 | 0028 | 0029 | 0030 | 0031 | 0032 | 0033 | 0034 | 0035 | 0036 | 0037 | 0038 | 0039 | 0040 | 0041 | 0042 | 0043 | 0044 | 0045 | 0046 | 0047 | 0048 | 0049 | 0050 | 0051 | 0052 | 0053 | 0054 | 0055 | 0056 | 0057 | 0058 | 0059 | 0060 | 0061 | 0062 | 0063 | 0064 | 0065 | 0066 | 0067 | 0068 | 0069 | 0070 | 0071 | 0072 | 0073 | 0074 | 0075 | 0076 | 0077 | 0078 | 0079 | 0080 | 0081 | 0082 | 0083 | 0084 | 0085 | 0086 | 0087 | 0088 | 0089 | 0090 | 0091 | 0092 | 0093 | 0094 | 0095 | 0096 | 0097 | 0098 | 0099 |

|        |        |        |        |        |        |        |        |        |        |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| .000   | -.1268 | -.1532 | -.1977 | -.2608 | -.2532 | -.309£ | -.3365 | -.3414 | -.2352 |
| 40.000 | -.1238 | -.1777 | -.2303 | -.2314 | -.235£ | -.235£ | -.2591 | -.2338 | -.1609 |

AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

(2263X)

$$\text{ALPHA} (1) = -4.005 \quad \text{BETA} (5) = 8.350$$

## SECTION ( ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

|      |       |       |       |       |       |       |       |       |        |        |
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| X/LB | .6520 | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0100 | 1.0460 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|

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|         |        |        |        |       |        |        |        |
|---------|--------|--------|--------|-------|--------|--------|--------|
| 70.000  | -.0655 | -.1197 | -.0888 | .0002 | -.1374 | -.1086 | -.1346 |
| 90.000  | -.0416 | -.0855 | -.0504 | .0205 | -.2143 | -.1838 | -.1733 |
| 105.000 |        |        | -.0169 | .0009 | .3532  | -.2469 | -.2320 |
| 110.000 |        |        |        |       |        |        |        |
| 120.000 | -.0577 | -.0751 | -.0335 | .1274 | -.3929 | -.4315 | -.3519 |
| 130.000 |        |        | .0598  | .1343 | -.5114 | -.3602 | -.3101 |
| 150.000 | -.0441 | -.0187 | .0350  | .4235 | -.4643 | .4012  | -.3101 |
| 165.000 | -.0304 |        | .1162  |       | -.3010 | -.3760 | -.1923 |
| 190.000 | -.0302 | .0290  | .1667  | .3597 |        |        |        |

|               |        |              |         |      |   |        |   |   |        |   |   |        |     |   |        |
|---------------|--------|--------------|---------|------|---|--------|---|---|--------|---|---|--------|-----|---|--------|
| ALPHA ( 2 ) = | - .025 | BETA ( 1 ) = | - 7.896 | MACH | = | .59678 | Q | = | 594.66 | P | = | 2395.3 | PV2 | = | 4.8558 |
|---------------|--------|--------------|---------|------|---|--------|---|---|--------|---|---|--------|-----|---|--------|

## SECTION 11 ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

|        |        |       |        |        |        |        |        |        |        |        |        |        |        |
|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 20.000 | 1.0345 | .3171 | -.0694 | -.1153 | -.1427 | -.1956 | -.1768 | -.1416 | -.1194 | -.0793 | -.0539 | -.0370 | -.0262 |
| 40.000 |        |       | -.0237 | -.1027 | -.1770 | -.1656 | -.2310 | -.1768 | -.1533 | -.0944 | -.0828 | -.0716 | -.0560 |
| 55.000 |        |       | .2020  | -.0348 | -.1315 | -.0158 | -.0475 | -.0097 | -.2109 | -.1544 | -.0828 | -.0716 | -.0560 |
| 70.000 |        |       | .4008  | .1304  | .1067  | .1341  | .0097  | .0174  | -.0952 | -.0201 | .0257  | .0507  |        |
| 80.000 |        |       | .5002  | .2949  | .1999  | .1341  | .0097  | .0174  | -.1664 | -.0561 | .0086  | .0400  |        |
| 90.000 |        | .7373 | .5457  | .3502  | .2404  | .1598  | .0174  | .1741  | -.1831 | -.2258 | -.0575 | -.0436 |        |
| 95.000 |        |       | .5511  | .3959  | .2914  | .2820  | .1741  |        | -.1831 | -.2258 | -.0575 | -.0436 |        |
| 99.000 |        |       | .4512  | .3132  | .2450  | .2595  | .5135  |        | -.2655 | -.0403 | .0256  | -.0588 |        |

— 2874  
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TABULATED PRESSURE D.

ES 11-073-1 )

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AMES 1-0-1 -140A/B/C/R ORB FUSELAGE

(XE8822)

ALPHA ( 2 ) = -.025 BETA ( 1 ) = -7.896

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9930 1.0180 1.0460

PHI

165.000 -.0500 .1773  
180.000 -.0600 .2017 .1339 .2558 .0997 -.0526 -.1588

ALPHA ( 2 ) = -.014 BETA ( 2 ) = -3.863 MACH = .59678 Q = 594.66 P = 2385.3 RN/L = 4.8568

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.0711 .3536 -.0311 -.0831 -.1205  
20.000 -.0057 -.0819 -.1475  
40.000 .1748 -.0424 -.1146  
55.000 .3152 .1184 .0446  
70.000 .3901 .1894 .1010 .0475  
90.000 .4387 .2385 .1403 .0749  
120.000 .4711 .3188 .2158 .2201  
140.000 .4304 .3133 .2332 .2506  
150.000  
162.000  
165.000  
169.000  
174.000  
180.000.0984  
.1170-1.054 -.0865 -.0557 -.0383 -.0129 -.0205  
-.1284  
-.1706 -.1177 -.0622 -.0515 -.0438 -.0305  
-.1769  
-.1616 -.1827 -.0605 -.0038 .0238  
-.2436 -.2158 -.0936 -.0143 .0179  
-.2637 -.2628 -.2254 -.0460 -.02.3  
-.3365  
-.5109 -.3504 -.1332 -.0581 -.0224

.4966

.3961

.4966

X/LB 1.0711 .5993 .3550 .2825 .2194 .2353 .6366 .9950 1.0180 1.0460

PHI

.000 -1.0533 -.0931 -.1473 -.2198 -.2254  
40.000 -.0739 -.1444 -.2110 -.2084 -.2084  
70.000 -.1185 -.1183 -.1130 -.1130 -.1130  
90.000 -.0731 -.0614 .0449 .1504 -.0736  
105.000 .1005 .2319 .1619 .1367 .1823  
110.000  
120.000  
135.000  
150.000  
165.000  
180.000

.2811

-.2045

C-5

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TABULATED PRESSURE DATA - 0.148 ( AMES 11-073-1 )

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(XE8822)

AMES 11-073(0A14F) -140A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = .070 BETA ( 3 ) = .189 MACH = .59678 Q = 594.66 P = 2385.3 RV/L = 4.8568

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120 | .1580 | .1660  | .1770    | .2040    | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|-------|-------|--------|----------|----------|--------|--------|--------|--------|-------|
| PHI     | .000   | .3644  | -.0275 | -.0739 | -.1187 |       |       | -.1161 | -.1019   | -.0843   | -.0489 | -.0290 | -.0073 | -.0178 |       |
| 20.000  |        | -.0083 | -.0635 | -.1339 | -.1456 |       |       | -.1292 | -.1151   | -.0971   | -.0432 | -.0270 | -.0249 | -.0117 |       |
| 40.000  |        | .1216  | -.0502 | -.1118 | -.1256 |       |       | -.1537 | -.1478   |          |        |        |        |        |       |
| 55.000  |        | .2248  | .0516  | -.0136 | -.0736 |       |       | -.1316 | -.1790   |          |        |        |        |        |       |
| 70.000  |        | .2749  | .0880  | .0090  | -.0242 |       |       | -.1484 | -.2255   | -.2264   | -.0911 | -.0328 | .0046  |        |       |
| 90.000  | .4500  | .3166  | .1211  | .0309  | -.0162 |       |       | -.1511 | -.3244   | -.2574   | -.1184 | -.0347 | .0069  |        |       |
| 120.000 |        | .3715  | .2214  | .1225  | .1379  |       |       | -.0321 | -.3588   | -.3008   | -.2398 | -.0468 | -.0155 |        |       |
| 140.000 |        |        |        |        |        |       |       |        | -.4128   |          |        |        |        |        |       |
| 150.000 |        | .3892  | .2814  | .1922  | .2121  |       |       | .3690  | -.5629   | -.3100   | -.1256 | -.0497 | -.0171 |        |       |
| 162.000 |        |        |        |        |        |       |       |        | -.0081   |          |        |        |        |        |       |
| 165.000 |        |        |        |        |        |       |       |        | .0280    |          |        |        |        |        |       |
| 169.000 |        |        |        |        |        |       |       |        |          | -.1.0930 | -.2463 | -.1215 | -.0494 | -.0136 |       |
| 174.000 |        |        |        |        |        |       |       | .4643  |          |          |        |        |        |        |       |
| 186.000 | 1.0828 | .5913  | .3738  | .2780  | .2190  | .2501 | .6239 | .4453  | -.1.2974 | -.2247   | -.1165 | -.0468 | -.0152 |        |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210 | .9600 | .9990  | 1.0180   | 1.0460   |        |        |        |        |       |

## PHI

|         |        |        |        |        |        |        |        |        |        |        |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|--|--|--|--|
| .000    | -.0523 | -.0952 | -.1451 | -.2215 | -.2270 | -.2969 | -.3294 |        |        |        |  |  |  |  |  |
| 40.000  | -.0829 | -.1399 | -.2108 | -.2087 | -.2067 | -.2344 | -.2862 |        | -.3451 | -.2224 |  |  |  |  |  |
| 70.000  | -.1378 | -.1447 | -.0527 | -.0528 | -.0695 | -.0661 | -.1098 |        | -.2570 | -.1787 |  |  |  |  |  |
| 90.000  | -.0879 | -.0827 | .0141  | .0823  | -.1398 | -.1287 | -.1579 |        |        |        |  |  |  |  |  |
| 105.000 |        | .0713  | .1075  | .1075  | -.2345 | -.1838 | -.2054 |        |        |        |  |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        | -.2908 |        |        |  |  |  |  |  |
| 120.000 | -.0341 | .0068  | .1511  | .1715  | -.3191 | -.2459 | -.2275 | -.2077 |        |        |  |  |  |  |  |
| 135.000 |        |        | .2095  | .3476  | -.2834 | -.2059 | -.2175 |        |        |        |  |  |  |  |  |
| 150.000 | .0024  | .0829  | .2242  | .4110  | -.2527 | -.2187 | -.2185 |        |        |        |  |  |  |  |  |
| 165.000 | .0062  | .2118  | .2118  | -.0977 | -.2185 | -.1716 |        |        |        |        |  |  |  |  |  |
| 180.000 | .0020  | .0787  | .2199  | .4451  |        |        |        |        |        |        |  |  |  |  |  |

ALPHA ( 2 ) = .063 BETA ( 4 ) = .4250 MACH = .59678 Q = 594.66 P = 2385.3 RV/L = 4.8568

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230  | .0460  | .0700  | .1120 | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|--------|--------|--------|--------|-------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | .3408  | -.0427 | -.0883 | -.1349 |       |       | -.1256 | -.1148 | -.0914 | -.0598 | -.0348 | -.0139 | -.0272 |       |
| 20.000  |       | -.0413 | -.0891 | -.1461 | -.1471 |       |       | -.1346 | -.1224 |        |        |        |        |        |       |
| 40.000  |       | .0443  | -.0879 | -.1345 | -.1318 |       |       | -.1520 | -.1446 | -.0990 | -.0434 | -.0232 | -.0227 | .0036  |       |
| 55.000  |       | .1160  | -.0289 | -.0841 | -.1217 |       |       | -.1764 | -.2137 |        |        |        |        |        |       |
| 70.000  |       | .1532  | -.0132 | -.0785 | -.0918 |       |       | -.2077 | -.2695 | -.2491 | -.1088 | -.0386 | -.0025 |        |       |
| 90.000  | .2761 | .1924  | .0067  | -.0663 | -.0959 |       |       | -.2303 | -.3943 | -.2896 | -.1306 | -.0448 | -.0071 |        |       |
| 120.000 |       | .2607  | .1151  | .0215  | .0353  |       |       | -.1541 | -.4425 | -.3361 | -.2609 | -.0572 | -.0251 |        |       |



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XE8822)

AMES 11-073(0A148) -130A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = .058 BETA ( 5 ) = 8.310

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|---------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |       |         |        |        |        |        |       |
| 180.000 | 1.0108 | .4883 | .3178 | .2173 | .1653 | .1974 |       | .3211 |       | -1.3037 | -.2750 | -.1661 | -.1620 | -.0751 |       |

| X/LB    | .6520 | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| PHI     |       |       |       |       |       |       |       |       |        |        |
| 180.000 |       |       |       |       |       |       |       |       |        |        |

|         |        |        |        |        |        |        |        |  |        |        |
|---------|--------|--------|--------|--------|--------|--------|--------|--|--------|--------|
| 40.000  | -.0675 | -.0978 | -.1509 | -.2282 | -.2301 | -.3016 | -.3334 |  | -.3461 | -.2382 |
| 70.000  | -.0611 | -.1343 | -.1966 | -.2199 | -.2199 | -.2684 | -.2415 |  | -.2294 | -.1544 |
| 90.000  | -.1594 | -.1899 | -.1227 | -.0302 | -.1498 | -.1179 | -.1362 |  |        |        |
| 105.000 | -.1106 | -.1281 | -.0709 | -.0336 | -.2284 | -.2051 | -.1884 |  |        |        |
| 110.000 |        | -.0325 | -.0318 | -.3516 | -.3525 | -.2327 |        |  |        |        |
| 120.000 | -.0772 | -.0846 | -.0150 | -.1292 | -.5606 | -.4159 | -.3391 |  |        |        |
| 135.000 |        | .0639  | .1170  | -.5156 | -.3574 | -.3018 |        |  |        |        |
| 150.000 | -.0576 | -.0258 | .0900  | .3619  | -.5025 | -.4108 | -.3071 |  |        |        |
| 165.000 | -.0583 | .0973  |        | -.3681 | -.3967 | -.1858 |        |  |        |        |
| 180.000 | -.0687 | .0025  | .1430  | .2980  |        |        |        |  |        |        |

ALPHA ( 3 ) = 3.933 BETA ( 1 ) = -7.911 MACH = .59760 Q = 596.20 P = 2385.0 RN/L = 4.8680

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB   | .0000  | .0080 | .0230 | .0460  | .0700  | .1120 | .1580 | .1660  | .1770 | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|--------|--------|-------|-------|--------|--------|-------|-------|--------|-------|--------|--------|--------|--------|-------|-------|
| PHI    |        |       |       |        |        |       |       |        |       |        |        |        |        |       |       |
| 20.000 | 1.0280 | .4893 | .0800 | -.0084 | -.0485 |       |       | -.0936 |       | -.0818 | -.0665 | -.0468 | -.0202 | .0175 | .0207 |

|         |        |       |       |       |        |        |       |        |        |         |        |        |        |        |       |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|--------|---------|--------|--------|--------|--------|-------|
| 40.000  |        | .1400 | .0248 | .0248 | -.0570 | -.1078 |       | -.1024 |        | -.0936  |        |        |        |        |       |
| 55.000  |        | .3538 | .1100 | .0182 | .0182  | -.0335 |       | -.0974 |        | -.0567  | -.0502 | -.0090 | -.0012 | .0081  | .0293 |
| 70.000  |        | .4948 | .2864 | .1995 | .1995  | .1095  |       | .0255  |        | -.0433  |        |        |        |        |       |
| 90.000  | .7008  | .5252 | .3239 | .2232 | .2232  | .1555  |       | .0229  |        | -.0818  | -.1390 | -.0446 | -.0093 | .0081  |       |
| 120.000 |        | .5304 | .3362 | .2389 | .2389  | .1681  |       | .0373  | -.1464 | -.1713  | -.0814 | -.0304 | -.0136 |        |       |
| 140.000 |        | .4594 | .3132 | .2137 | .2137  | .1475  |       | .1475  | -.2176 | -.2813  | -.3028 | -.1716 | -.1622 |        |       |
| 150.000 |        | .3243 | .2071 | .1407 | .1407  | .1806  |       | .4684  | -.3413 | -.4792  | -.2062 | -.1281 | -.1102 |        |       |
| 162.000 |        |       |       |       |        |        |       | .1295  |        |         |        |        |        |        |       |
| 165.000 |        |       |       |       |        |        |       | .0951  |        |         |        |        |        |        |       |
| 169.000 |        |       |       |       |        |        |       |        |        |         |        |        |        |        |       |
| 174.000 |        |       |       |       |        |        |       |        |        |         |        |        |        |        |       |
| 180.000 | 1.0280 | .4383 | .1974 | .1212 | .0894  | .1349  | .6090 | .4537  |        | -1.2896 | -.3413 | -.2034 | -.1198 | -.0953 |       |

| X/LB    | .6520 | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| PHI     |       |       |       |       |       |       |       |       |        |        |
| 180.000 |       |       |       |       |       |       |       |       |        |        |

|        |        |        |        |        |        |        |        |  |        |        |
|--------|--------|--------|--------|--------|--------|--------|--------|--|--------|--------|
| 40.000 | -.0077 | -.0451 | -.0991 | -.1830 | -.2017 | -.2777 | -.3253 |  | -.3563 | -.2399 |
| 70.000 | -.0212 | -.0884 | -.1698 | -.1902 | -.2052 | -.2728 |        |  | -.2835 | -.2357 |

DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

PAGE 327

ALPHA ( 3 ) = 3.935 BETA ( 1 ) = -7.911

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8822)

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|--------|--------|--------|-------|--------|--------|
| PHI     |        |        |        |       |        |        |        |       |        |        |
| 70.000  | -.2061 | -.1446 | -.0048 | .1672 | .0400  | .0311  | -.0520 |       |        |        |
| 90.000  | -.1436 | -.0927 | .0510  | .2174 | .0014  | -.0384 | -.1101 |       |        |        |
| 105.000 |        |        | .0879  | .3655 | -.0678 | -.0860 | -.1588 |       |        |        |
| 110.000 |        |        |        |       |        |        | -.2692 |       |        |        |
| 120.000 | -.2036 | -.0903 | .1289  | .5224 | -.1929 | -.1444 | -.1453 |       |        |        |
| 135.000 |        |        | .1834  | .3707 | -.2092 | -.1474 | -.1910 |       |        |        |
| 150.000 | -.1048 | -.0167 | .1797  | .1141 | -.2403 | -.1350 | -.1761 |       |        |        |
| 165.000 | -.0875 |        | .1421  | .0770 | -.0657 | -.1638 |        |       |        |        |
| 180.000 | -.0853 | -.0173 | .1193  | .2119 |        |        |        |       |        |        |

ALPHA ( 3 ) = 3.935 BETA ( 2 ) = -3.056 MACH = .59760 Q = .596.20 P = 2385.0 RN/L = 4.8680

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770 | .2040    | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|-------|----------|--------|--------|--------|-------|-------|
| PHI     |        |       |       |       |        |        |       |        |       |          |        |        |        |       |       |
| 70.000  | 1.0636 | .5298 | .1177 | .0302 | -.0317 |        |       | -.0698 |       | -.0642   | -.0524 | -.0287 | -.0014 | .0277 | .0326 |
| 90.000  |        |       | .1562 | .0397 | -.0429 | -.0811 |       | -.0833 |       | -.0781   |        |        |        |       |       |
| 105.000 |        |       | .3069 | .0950 | .0143  | -.0247 |       | -.0783 |       | -.0873   |        |        |        |       |       |
| 120.000 |        |       | .3930 | .2069 | .1291  | .0401  |       | -.0390 |       | -.0969   |        |        |        |       |       |
| 135.000 |        |       | .4126 | .2238 | .1339  | .0782  |       | -.0471 |       | -.1520   |        |        |        |       |       |
| 150.000 |        | .5657 | .4180 | .2359 | .1415  | .0865  |       | -.0463 |       | -.2240   |        |        |        |       |       |
| 165.000 |        |       | .3935 | .2447 | .1533  | .1710  |       | .0692  |       | -.2910   |        |        |        |       |       |
| 180.000 |        |       | .3154 | .2065 | .1403  | .1795  |       | .4205  |       | -.4008   |        |        |        |       |       |
|         |        |       |       |       |        |        |       | .0486  |       | -.5943   |        |        |        |       |       |
|         |        |       |       |       |        |        |       | .0396  |       |          |        |        |        |       |       |
|         |        |       |       |       |        |        |       |        |       | -.1.2479 |        |        |        |       |       |
|         |        |       |       |       |        |        |       |        |       | -.3007   |        |        |        |       |       |
|         |        |       |       |       |        |        |       |        |       | -.1.4603 |        |        |        |       |       |
|         |        |       |       |       |        |        |       |        |       | -.2686   |        |        |        |       |       |
|         |        |       |       |       |        |        |       |        |       | -.1.4449 |        |        |        |       |       |
|         |        |       |       |       |        |        |       |        |       | -.0754   |        |        |        |       |       |
|         |        |       |       |       |        |        |       |        |       | -.0517   |        |        |        |       |       |

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

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|-----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8822)

ALPHA ( 3 ) = 3.936 BETA ( 2 ) = -3.856

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| PHI     |        |       |       |       |       |       |       |       |        |        |
| 165.000 | -.0411 |       |       |       |       |       |       |       |        |        |
| 180.000 | -.0492 | .0360 | .1713 | .3001 |       |       |       |       |        |        |

ALPHA ( 3 ) = 3.935 BETA ( 3 ) = .172 MACH = .59760 Q = 596.20 P = 2385.0 RV/L = 4.8680

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770  | .2040    | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|--------|----------|--------|--------|--------|--------|--------|
| PHI     |        |       |       |       |        |        |       |        |        |          |        |        |        |        |        |
| .000    | 1.0732 | .5316 | .1109 | .0323 | -.0249 |        |       | -.0675 |        | -.0513   | -.0471 | -.0199 | .0093  | .0352  | .0346  |
| 20.000  |        | .1421 | .0471 | .0694 | -.0391 | -.0768 |       | -.0701 |        | -.0750   |        | -.0911 | -.0483 | .0188  | .0205  |
| 40.000  |        | .2415 | .0694 | .2882 | -.0097 | -.0377 |       | -.0754 |        | -.0911   |        | -.0049 | .0188  | .0205  | .0571  |
| 55.000  |        | .2882 | .1211 | .2929 | .0513  | -.0204 |       | -.0927 |        | -.1497   |        |        |        |        |        |
| 70.000  |        | .2929 | .1228 | .3035 | .0397  | .0016  |       | -.1154 |        | -.2080   |        | -.2291 | -.1189 | -.0583 | -.0386 |
| 90.000  |        | .4206 | .1283 | .3035 | .0483  | .0088  |       | -.1208 |        | -.3014   |        | -.2558 | -.1377 | -.0655 | -.0424 |
| 120.000 |        |       | .1736 | .3109 | .0824  | .1163  |       | -.0202 |        | -.3708   |        | -.3226 | -.2579 | -.0847 | -.0636 |
| 140.000 |        |       |       | .2802 | .1969  | .1126  | .1521 | .3331  |        | -.4599   |        | -.6366 | -.3609 | -.1496 | -.0572 |
| 150.000 |        |       |       |       |        |        |       |        | -.0538 |          |        |        |        |        |        |
| 151.000 |        |       |       |       |        |        |       |        | -.0365 |          |        |        |        |        |        |
| 162.000 |        |       |       |       |        |        |       |        |        | -.1.2035 | -.2775 | -.1424 | -.0600 | -.0358 |        |
| 165.000 |        |       |       |       |        |        |       |        |        |          |        |        |        |        |        |
| 169.000 |        |       |       |       |        |        |       |        |        |          |        |        |        |        |        |
| 174.000 |        |       |       |       |        |        |       |        |        |          |        |        |        |        |        |
| 180.000 | 1.0732 | .4476 | .2540 | .1717 | .1299  | .1803  | .5724 | .3798  |        | -.1.4343 | -.2549 | -.1317 | -.0567 | -.0327 |        |

## PHI

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| .000    | .0064  | -.0358 | -.0965 | -.1833 | -.1977 | -.2799 | -.3177 |        | -.3489 | -.2187 |
| 40.000  | .0005  | -.0811 | -.1616 | -.1616 | -.1933 | -.2041 | -.2724 |        | -.2578 | -.1749 |
| 70.000  | -.2470 | -.2118 | -.0906 | .0585  | -.0695 | -.0575 | -.1042 |        |        |        |
| 90.000  | -.1676 | -.1351 | -.0156 | .0704  | -.1325 | -.1251 | -.1459 |        |        |        |
| 105.000 |        |        | .0519  | .0939  | -.2175 | -.1764 | -.2013 |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.2757 |        |        |
| 120.000 | -.1015 | -.0297 | .1427  | .1132  | -.3081 | -.2425 | -.2099 |        |        |        |
| 135.000 |        |        | .1953  | .2406  | -.2966 | -.2135 | -.2166 |        |        |        |
| 150.000 | -.0263 | .0351  | .1941  | .3288  | -.2755 | -.2339 | -.2149 |        |        |        |
| 165.000 | -.0239 | .1783  |        |        | -.1290 | -.2386 | -.1726 |        |        |        |
| 180.000 | -.0306 | .0403  | .1749  | .4087  |        |        |        |        |        |        |

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

DATE 10 FEB 76

## TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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ALPHA ( 3 ) = 4.026 BETA ( 4 ) = 4.240 MACH = .59760 Q = 596.20 P = 2385.0 RV/L = 4.8680  
 SECTION ( 1 ) ORBITER FUSELAGE (XEB822)

| SECTION ( 1 ) ORBITER FUSELAGE | DEPENDENT VARIABLE  | Q      | P       | RV/L   |
|--------------------------------|---|--------|---------|--------|
| X/LB                           | .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740 |        |         |        |
| PHI                            |   |        |         |        |
| 20.000                         | .0000   | .0741  | -.0674  | -.0242 |
| 40.000                         | 1.0574  | -.0435 | -.0835  | -.0023 |
| 60.000                         | .5123   | -.0586 | -.1135  | -.0022 |
| 80.000                         | .0957   | -.0461 | -.1941  | -.0089 |
| 100.000                        | .1585   | -.0682 | -.1941  | -.0485 |
| 120.000                        | .1684   | -.0328 | -.2522  | -.0678 |
| 140.000                        | .1706   | -.0456 | -.3645  | -.0437 |
| 160.000                        | .1894   | -.0651 | -.4408  | -.0637 |
| 180.000                        | .2176   | -.0451 | -.5238  | -.0426 |
| 200.000                        | .2258   | .0002  | -.6835  | -.0373 |
| 220.000                        | .0957   | -.0817 | -.1756  |        |
| 240.000                        | .1585   | -.0682 | .1488   |        |
| 260.000                        | .1684   | -.0328 | -.12036 | -.0625 |
| 280.000                        | .1706   | -.0456 | -.14226 | -.0701 |
| 300.000                        | .1894   | -.0651 | -.2662  | -.0458 |
| 320.000                        | .2176   | -.0451 | 1.0180  |        |
| 340.000                        | .2258   | .0002  | 1.0460  |        |
| 360.000                        | .0957   | -.0817 |         |        |
| 380.000                        | .1585   | -.0682 |         |        |
| 400.000                        | .1684   | -.0328 |         |        |
| 420.000                        | .1706   | -.0456 |         |        |
| 440.000                        | .1894   | -.0651 |         |        |
| 460.000                        | .2176   | -.0451 |         |        |
| 480.000                        | .2258   | .0002  |         |        |
| 500.000                        | .0957   | -.0817 |         |        |
| 520.000                        | .1585   | -.0682 |         |        |
| 540.000                        | .1684   | -.0328 |         |        |
| 560.000                        | .1706   | -.0456 |         |        |
| 580.000                        | .1894   | -.0651 |         |        |
| 600.000                        | .2176   | -.0451 |         |        |
| 620.000                        | .2258   | .0002  |         |        |
| 640.000                        | .0957   | -.0817 |         |        |
| 660.000                        | .1585   | -.0682 |         |        |
| 680.000                        | .1684   | -.0328 |         |        |
| 700.000                        | .1706   | -.0456 |         |        |
| 720.000                        | .1894   | -.0651 |         |        |
| 740.000                        | .2176   | -.0451 |         |        |
| 760.000                        | .2258   | .0002  |         |        |
| 780.000                        | .0957   | -.0817 |         |        |
| 800.000                        | .1585   | -.0682 |         |        |
| 820.000                        | .1684   | -.0328 |         |        |
| 840.000                        | .1706   | -.0456 |         |        |
| 860.000                        | .1894   | -.0651 |         |        |
| 880.000                        | .2176   | -.0451 |         |        |
| 900.000                        | .2258   | .0002  |         |        |
| 920.000                        | .0957   | -.0817 |         |        |
| 940.000                        | .1585   | -.0682 |         |        |
| 960.000                        | .1684   | -.0328 |         |        |
| 980.000                        | .1706   | -.0456 |         |        |
| 1000.000                       | .1894   | -.0651 |         |        |

ALPHA ( 3 ) = 4.030 BETA ( 5 ) = 8.292 MACH = .59760 Q = 596.20 P = 2385.0 RV/L = 4.8680  
 SECTION ( 1 ) ORBITER FUSELAGE

| SECTION ( 1 ) ORBITER FUSELAGE | DEPENDENT VARIABLE CP   | Q      | P      | RV/L   |
|--------------------------------|---|--------|--------|--------|
| X/LB                           | .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740 |        |        |        |
| PHI                            |   |        |        |        |
| 20.000                         | .0000   | .0870  | -.0838 | -.0413 |
| 40.000                         | 1.0033  | -.0594 | -.1090 | -.0183 |
| 60.000                         | .4838   | -.0180 | -.1608 | -.0349 |
| 80.000                         | .0861   | -.0493 | -.2390 | -.0150 |
| 100.000                        | .0618   | -.0753 | -.2952 | -.0558 |
| 120.000                        | .0585   | -.1106 | -.4155 | -.0708 |
| 140.000                        | .0502   | -.1346 | -.5109 | -.0572 |
| 160.000                        | .0479   | -.0841 | -.2777 | -.0912 |
| 180.000                        | .0734   | -.1351 | -.2988 | -.1554 |
| 200.000                        | .1079   | -.0962 | -.3604 | -.2475 |
| 220.000                        | .0861   | -.0108 | -.0838 | -.0126 |
| 240.000                        | .0618   | -.0798 | -.1090 | -.0183 |
| 260.000                        | .0585   | -.0493 | -.1608 | -.0349 |
| 280.000                        | .0502   | -.1106 | -.2390 | -.0150 |
| 300.000                        | .0479   | -.1346 | -.4155 | -.0558 |
| 320.000                        | .0734   | -.1351 | -.5109 | -.0708 |
| 340.000                        | .1079   | -.0962 | -.3604 | -.2475 |
| 360.000                        | .0861   | -.0108 | -.0838 | -.0126 |
| 380.000                        | .0618   | -.0798 | -.1090 | -.0183 |
| 400.000                        | .0585   | -.0493 | -.1608 | -.0349 |
| 420.000                        | .0502   | -.1106 | -.2390 | -.0150 |
| 440.000                        | .0479   | -.1346 | -.4155 | -.0558 |
| 460.000                        | .0734   | -.1351 | -.5109 | -.0708 |
| 480.000                        | .1079   | -.0962 | -.3604 | -.2475 |
| 500.000                        | .0861   | -.0108 | -.0838 | -.0126 |
| 520.000                        | .0618   | -.0798 | -.1090 | -.0183 |
| 540.000                        | .0585   | -.0493 | -.1608 | -.0349 |
| 560.000                        | .0502   | -.1106 | -.2390 | -.0150 |
| 580.000                        | .0479   | -.1346 | -.4155 | -.0558 |
| 600.000                        | .0734   | -.1351 | -.5109 | -.0708 |
| 620.000                        | .1079   | -.0962 | -.3604 | -.2475 |
| 640.000                        | .0861   | -.0108 | -.0838 | -.0126 |
| 660.000                        | .0618   | -.0798 | -.1090 | -.0183 |
| 680.000                        | .0585   | -.0493 | -.1608 | -.0349 |
| 700.000                        | .0502   | -.1106 | -.2390 | -.0150 |
| 720.000                        | .0479   | -.1346 | -.4155 | -.0558 |
| 740.000                        | .0734   | -.1351 | -.5109 | -.0708 |
| 760.000                        | .1079   | -.0962 | -.3604 | -.2475 |
| 780.000                        | .0861   | -.0108 | -.0838 | -.0126 |
| 800.000                        | .0618   | -.0798 | -.1090 | -.0183 |
| 820.000                        | .0585   | -.0493 | -.1608 | -.0349 |
| 840.000                        | .0502   | -.1106 | -.2390 | -.0150 |
| 860.000                        | .0479   | -.1346 | -.4155 | -.0558 |
| 880.000                        | .0734   | -.1351 | -.5109 | -.0708 |
| 900.000                        | .1079   | -.0962 | -.3604 | -.2475 |

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TABULATED PRESSURE DATA - OA148 ' AMES 11-073-1 )

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AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

(XE8822)

ALPHA ( 3 ) = 4.030 BETA ( 5 ) = 0.272

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 140.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       | .0955 |        |        |       |       |       |       |       |
| 160.000 |        |       | .1376 | .0812 | .0031 | .0251 |       |       |        |        |       |       |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 169.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 180.000 | 1.0033 | .3507 | .2076 | .1258 | .0738 | .1264 | .4523 | .2807 |        |        |       |       |       |       |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |

PHI

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|
| 140.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 160.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 169.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 180.000 | 1.0033 | .3507 | .2076 | .1258 | .0738 | .1264 | .4523 | .2807 |        |        |       |       |       |       |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |

ALPHA ( 4 ) = 7.901 BETA ( 1 ) = -7.895 MACH = .59758

DEPENDENT VARIABLE CP

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 140.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 160.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 169.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 180.000 | 1.0033 | .3507 | .2076 | .1258 | .0738 | .1264 | .4523 | .2807 |        |        |       |       |       |       |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |

PHI

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|
| 140.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 160.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 169.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 180.000 | 1.0033 | .3507 | .2076 | .1258 | .0738 | .1264 | .4523 | .2807 |        |        |       |       |       |       |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |

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TABULATED PRESSURE DATA - 0A14 ( AMES 11-073-1 )

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AMES 11-073/0A148) 140A/B/C/R ORB FUSELAGE

(XE8822)

ALPHA ( 4 ) = 7.901 BETA ( 1 ) = -7.896

## SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | 0.000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1650 | .1770  | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|--------|---------|--------|--------|--------|--------|-------|
| PHI     |        |        |        |        |        |        |        |       |        |         |        |        |        |        |       |
| 180.000 | .9927  | .2858  | .0775  | .0446  | .0087  | .0630  |        | .1710 |        | -1.7551 | -.3108 | -.1822 | -.1145 | -.1032 |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460  |        |        |        |        |       |
| PHI     |        |        |        |        |        |        |        |       |        |         |        |        |        |        |       |
| 40.000  | .0639  | .0174  | -.0458 | -.1332 | -.1670 | -.2517 | -.3083 |       | -.3522 | -.2361  |        |        |        |        |       |
| 70.000  | .0810  | -.0228 | -.1089 | -.1616 | -.1651 | -.2586 |        |       | -.2671 | -.2093  |        |        |        |        |       |
| 90.000  | -.3089 | -.2112 | .0371  | .1716  | .0475  | .0389  | -.0401 |       |        |         |        |        |        |        |       |
| 105.000 | -.2411 | -.1518 | .0232  | .2200  | .0131  | -.0313 | -.1027 |       |        |         |        |        |        |        |       |
| 110.000 |        | .0528  | .3846  | -.0504 | -.0771 | -.1572 |        |       |        |         |        |        |        |        |       |
| 120.000 |        |        | .0630  | .5371  | -.2220 | -.1653 | -.1170 |       |        |         |        |        |        |        |       |
| 135.000 |        | -.3387 | -.1764 | .3232  | -.2569 | -.1763 | -.2100 |       |        |         |        |        |        |        |       |
| 150.000 |        | -.1475 | -.0518 | .1476  | -.0695 | -.1621 | -.1828 |       |        |         |        |        |        |        |       |
| 165.000 |        | -.1181 | .1226  | .0576  | -.0744 | -.1667 |        |       |        |         |        |        |        |        |       |
| 180.000 |        | -.1109 | -.0281 | .1392  |        |        |        |       |        |         |        |        |        |        |       |

ALPHA ( 4 ) = 7.913 BETA ( 2 ) = -3.861 MACH = .59758 Q = .596.20 P = 2385.1 RN/L = 4.8692

## SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | 0.000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|-------|
| PHI     |        |       |        |        |        |        |        |        |        |         |        |        |        |        |       |
| 20.000  | 1.0255 | .6757 | .2582  | .1324  | .0672  |        |        | -.0108 |        | -.0155  | -.0048 | .0154  | .0408  | .0942  | .0951 |
| 40.000  |        |       | .3056  | .1662  | .0653  | .0062  |        | -.0098 |        | -.0200  | .0067  | .0461  | .0690  | .0761  | .1268 |
| 55.000  |        |       | .4292  | .2194  | .1239  | .0693  |        | .0141  |        | -.0162  |        |        |        |        |       |
| 70.000  |        |       | .4412  | .2640  | .1752  | .0810  |        | -.0100 |        | -.0949  |        |        |        |        |       |
| 90.000  |        | .5092 | .4067  | .2400  | .1415  | .0869  |        | -.0359 |        | -.1419  | -.2099 | -.1243 | -.0830 | -.0737 |       |
| 120.000 |        |       | .3770  | .2137  | .1382  | .0824  |        | -.0359 |        | -.2196  | -.2452 | -.1504 | -.0958 | -.0850 |       |
| 140.000 |        |       | .2953  | .1631  | .0772  | .1156  |        | .0443  |        | -.3107  | -.3524 | -.3568 | -.2205 | -.2186 |       |
| 150.000 |        |       | .1843  | .1106  | .0404  | .1061  |        | .3807  |        | -.4653  | -.4790 | -.2007 | -.1134 | -.1031 |       |
| 162.000 |        |       |        |        |        |        |        |        | .0039  |         |        |        |        |        |       |
| 165.000 |        |       |        |        |        |        |        |        | -.0243 |         |        |        |        |        |       |
| 169.000 |        |       |        |        |        |        |        |        |        | -.13945 | -.3363 | -.1741 | -.0967 | -.0823 |       |
| 174.000 |        |       |        |        |        |        |        |        |        |         |        |        |        |        |       |
| 180.000 | 1.0255 | .2837 | .1127  | .0748  | .0342  | .0952  | .5446  | .2726  |        | -.16263 | -.2840 | -.1537 | -.0773 | -.0664 |       |
| X/LB    | .6520  | .7290 | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460  |        |        |        |        |       |
| PHI     |        |       |        |        |        |        |        |        |        |         |        |        |        |        |       |
| 40.000  | .0761  | .0292 | -.0377 | -.1254 | -.1604 | -.2513 | -.3032 |        | -.3339 | -.2142  |        |        |        |        |       |
| 60.000  | .0637  |       | -.0190 | -.1067 | -.1662 | -.1662 | -.2575 |        | -.2452 | -.1827  |        |        |        |        |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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ALPHA ( 4 ) = 7.913 BETA ( 2 ) = -3.861

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB82E)

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |       |        |        |        |        |        |        |
| 70.000  | -.3509 | -.2534 | -.0974 | .1066 | -.0098 | -.0014 | -.0626 |        |        |        |
| 90.000  | -.2577 | -.1828 |        | .1462 | -.0523 | -.0713 | -.1220 |        |        |        |
| 105.000 |        |        | .0254  | .2670 | -.1329 | -.1225 | -.1734 |        |        |        |
| 110.000 |        |        |        |       |        |        |        | -.2540 |        |        |
| 120.000 | -.2407 | -.0921 | .1557  | .2020 | -.2684 | -.1932 | -.1734 | -.1912 |        |        |
| 135.000 |        |        | .1942  | .1479 | -.2729 | -.1919 | -.2082 |        |        |        |
| 150.000 | -.0977 | .0002  | .1896  | .1376 | -.2735 | -.1896 | -.1950 |        |        |        |
| 165.000 | -.0794 |        | .1522  |       | -.0507 | -.1538 | -.1708 |        |        |        |
| 180.000 | -.0787 | .0090  | .1413  | .2763 |        |        |        |        |        |        |

ALPHA ( 4 ) = 8.049 BETA ( 3 ) = .175 MACH = .59750 Q = 596.20 P = 2385.1 RN/L = 4.8692

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660  | .1770  | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|--------|--------|---------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |        |        |         |        |        |        |        |       |
| 20.000  | 1.0331 | .6838 | .2632 | .1415 | .0683 |       |       | -.0067 |        | -.0123  | .0000  | .0178  | .0531  | .0845  | .0943 |
| 40.000  |        |       | .2809 | .1502 | .0576 | .0055 |       | -.0143 |        | -.0244  |        |        |        |        |       |
| 55.000  |        |       | .3397 | .1707 | .0875 | .0308 |       | -.0164 |        | -.0489  | -.0291 | .0180  | .0486  | .0638  | .1202 |
| 70.000  |        |       | .3185 | .1543 | .0690 | .0038 |       | -.0837 |        | -.1559  |        |        |        |        |       |
| 90.000  |        | .3532 | .2842 | .1253 | .0386 | .0069 |       | -.1105 |        | -.2084  | -.2523 | -.1551 | -.1055 | -.0898 |       |
| 120.000 |        |       | .2703 | .1163 | .0426 | .0045 |       | -.1143 |        | -.2989  | -.2743 | -.1689 | -.1077 | -.0969 |       |
| 140.000 |        |       | .2273 | .1013 | .0245 | .0711 |       | -.0306 |        | -.3926  | -.3638 | -.3164 | -.1490 | -.1373 |       |
| 150.000 |        |       | .1668 | .0968 | .0362 | .0903 |       | .3005  | -.0973 | -.7193  | -.4066 | -.1692 | -.0815 | -.0699 |       |
| 151.000 |        |       |       |       |       |       |       |        | -.1049 |         |        |        |        |        |       |
| 162.000 |        |       |       |       |       |       |       |        |        | -1.3406 | -.3015 | -.1523 | -.0685 | -.0550 |       |
| 165.000 |        |       |       |       |       |       | .5146 |        |        |         |        |        |        |        |       |
| 169.000 |        |       |       |       |       | .1084 |       | .3517  |        |         |        |        |        |        |       |
| 174.000 |        |       |       |       |       |       |       |        |        |         |        |        |        |        |       |
| 180.000 | 1.0331 | .2793 | .1278 | .0866 | .0538 |       |       | .3185  |        | -1.5376 | -.2789 | -.1385 | -.0670 | -.0536 |       |

X/LB

PHI

|         |        |        |        |        |        |        |        |        |  |  |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--|--|--|--|--|--|--|
| 40.000  | .0787  | .0332  | -.0408 | -.1288 | -.1649 | -.2517 | -.3073 |        |  |  |  |  |  |  |  |
| 70.000  | .0887  |        | -.0166 | -.1095 | -.1665 | -.1725 | -.2457 |        |  |  |  |  |  |  |  |
| 90.000  | -.3596 | -.2832 | -.1228 | .0497  | -.0732 | -.0538 | -.0960 |        |  |  |  |  |  |  |  |
| 105.000 | -.2667 | -.1961 | -.0414 | .0692  | -.1397 | -.1244 | -.1457 |        |  |  |  |  |  |  |  |
| 110.000 |        |        | .0410  | .1029  | -.2118 | -.1712 | -.1972 |        |  |  |  |  |  |  |  |
| 120.000 | -.1658 | -.0721 | .1032  | .1101  | -.3026 | -.2366 | -.2049 | -.2671 |  |  |  |  |  |  |  |
| 135.000 |        |        | .1223  | .2450  | -.3158 | -.2294 | -.2242 | -.1960 |  |  |  |  |  |  |  |
| 150.000 | -.0749 | -.0109 | .1416  | .3999  | -.3107 | -.2516 | -.2153 |        |  |  |  |  |  |  |  |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-07310A148 - 140A/B/C/R ORB FUSELAGE

(XE8822)

ALPHA ( 4 ) = 8.049 BETA ( 3 ) = .175

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 -.0607 .1383  
180.000 -.0617 .0138 .1502 .4290  
-.1555 -.2552 -.1749

ALPHA ( 4 ) = 8.049 BETA ( 4 ) = 4.238 MACH = .59758 Q = 596.20 P = 2385.1 RN/L = 4.8692

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.0137 .6653 .2540 .1338 .0574  
20.000 .2381 .1161 .0341 -.0130  
40.000 .2381 .0888 .0248 -.0211  
55.000 .1904 .0431 -.0170 -.0839  
70.000 .1590 .0229 -.0491 -.0659  
90.000 .1592 .0181 -.0434 -.0649  
120.000 .1488 .0341 -.0363 .0200  
140.000 .1212 .0676 .0013 .0570  
150.000  
151.000  
162.000  
165.000  
169.000  
174.000  
180.000-.0087  
-.0324  
-.0564  
-.1486  
-.1681  
-.1775  
-.1123  
-.2023  
-.2069  
-.2065-.0167  
-.0394  
-.0957  
-.2070  
-.2599  
-.3525  
-.4525  
-.5768  
-.7484  
-.3570  
-.1579  
-.0696  
-.0532.0140 .0404 .0805 .0894  
-.0249 .0109 .0406 .1017  
-.1745 -.1280 -.1045  
-.1775 -.1104 -.0979  
-.2704 -.1004 -.0822  
-.1579 -.0696 -.0532

-1.3168 -.2871 -.1474 -.0729 -.3521

-1.5213 -.2832 -.1503 -.0807 -.0684

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .0725 .0266 .1285 .1602 .2543 .3104  
40.000 .0203 .1086 .1690 .1780 .2160  
70.000 .3766 .3149 .0170 .1234 .1101 .1305  
90.000 .2769 .2183 .0814 .0232 .2046 .1655 .1644  
105.000 .0285 .0110 .3126 .2229 .2203  
110.000  
120.000 .1470 .1158 .0001 .0672 .3987 .2978 .2442  
135.000 .1057 .3379 .4015 .2790 .2535  
150.000 .0672 .0175 .1326 .4137 .3285 .2547  
165.000 .0608 .1190 .2740 .3245 .1688  
180.000 .0822 .0082 .2404-.3465  
-.2347  
-.2185  
-.1496  
-.2867  
-.2063

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## TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB822)

ALPHA ( 4 ) = 8.046 BETA ( 5 ) = 8.297 MACH = .59758 Q = 596.20 P = 2385.1 RN/L = 4.8692

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460  | .0700  | .1120  | .1580 | .1660  | .1770   | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|-------|-------|--------|--------|--------|-------|--------|---------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | .9399 | .6323 | .2265  | .1187  | .0348  |       | -.0252 | -.0323  | -.0179 | -.0013 | .0343  | .0680  | .0686  |       |
| 20.000  |       |       | .1762 | .0688  | -.0068 | -.0401 |       | -.0651 | -.0782  | -.1713 | -.1623 | -.0861 | -.0386 | .0341  | .0816 |
| 40.000  |       |       | .1176 | .0179  | -.0539 | -.0847 |       | -.1225 | -.2762  | -.3074 | -.3065 | -.1899 | -.1391 | -.1232 |       |
| 55.000  |       |       | .0549 | -.0696 | -.1259 | -.1690 |       | -.2207 | -.4100  | -.3032 | -.3032 | -.1840 | -.1037 | -.0974 |       |
| 70.000  |       |       | .0306 | -.0872 | -.1402 | -.1253 |       | -.2266 | -.5180  | -.3648 | -.2477 | -.0709 | -.0546 |        |       |
| 90.000  |       | .0143 | .0436 | -.0791 | -.1245 | -.1239 |       | -.2371 | -.6111  | -.3341 | -.1602 | -.0740 | -.0558 |        |       |
| 120.000 |       |       | .0485 | -.0487 | -.1136 | -.0601 |       | -.2069 | -.7864  | -.3341 | -.1602 | -.0740 | -.0558 |        |       |
| 140.000 |       |       | .0483 | .0074  | -.0546 | -.0051 |       | .0782  | -.3433  |        |        |        |        |        |       |
| 150.000 |       |       |       |        |        |        |       |        | -.3348  |        |        |        |        |        |       |
| 151.000 |       |       |       |        |        |        |       |        |         |        |        |        |        |        |       |
| 162.000 |       |       |       |        |        |        |       |        |         |        |        |        |        |        |       |
| 165.000 |       | .9599 | .1892 | .0916  | .0322  | -.0139 | .0568 | .2290  | -1.2990 | -.3017 | -.1735 | -.0949 | -.0891 |        |       |
| 169.000 |       |       |       |        |        |        |       |        |         |        |        |        |        |        |       |
| 174.000 |       |       |       |        |        |        |       |        |         |        |        |        |        |        |       |
| 180.000 |       | .6520 | .7290 | .7750  | .8210  | .8790  | .9210 | .9600  | -1.5220 | -.3213 | -.1937 | -.1161 | -.1130 |        |       |

X/LB

PHI

|         |        |        |        |        |        |        |        |  |        |        |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--|--------|--------|--|--|--|--|--|
| 40.000  | .0555  | .0214  | -.0454 | -.1356 | -.1668 | -.2540 | -.3193 |  | -.3474 | -.2294 |  |  |  |  |  |
| 70.000  | .0650  | -.3244 | -.0300 | -.1129 | -.1841 | -.1825 | -.2089 |  | -.2036 | -.1356 |  |  |  |  |  |
| 90.000  | .687   | -.2464 | -.2014 | -.0750 | -.1657 | -.1292 | -.1437 |  |        |        |  |  |  |  |  |
| 105.000 | .687   | -.2464 | -.1478 | -.0810 | -.2445 | -.1895 | -.1741 |  |        |        |  |  |  |  |  |
| 110.000 |        |        | -.1046 | -.0114 | -.3713 | -.2527 | -.2322 |  |        |        |  |  |  |  |  |
| 120.000 | -.1566 | -.1457 | -.0593 | .1853  | -.5136 | -.3667 | -.2901 |  |        |        |  |  |  |  |  |
| 135.000 |        |        | .0503  | .3767  | -.4922 | -.3444 | -.2924 |  |        |        |  |  |  |  |  |
| 150.000 | -.0938 | -.0483 | .0726  | .1201  | -.4967 | -.3978 | -.2833 |  |        |        |  |  |  |  |  |
| 165.000 | -.0957 |        | .0791  | -.3860 | -.3746 | -.1870 |        |  |        |        |  |  |  |  |  |
| 180.000 | -.1164 | -.0399 | .1053  | .1674  |        |        |        |  |        |        |  |  |  |  |  |

ALPHA ( 5 ) = 11.963 BETA ( 1 ) = -7.860 MACH = .59774 Q = 596.43 P = 2384.9 RN/L = 4.8734

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|-------|
| PHI     | .000  | .9263 | .7714 | .3618 | .2215 | .1441 |       | .0387 | .0348  | .0386  | .0543  | .0866  | .1293  | .1501 |       |
| 20.000  |       |       |       | .4454 | .2866 | .1714 | .0909 | .0617 | .0488  | .0943  | .1293  | .1444  | .1575  | .2090 |       |
| 40.000  |       |       |       | .5923 | .3701 | .2673 | .1881 | .1121 | .0842  | -.0143 |        |        |        |       |       |
| 55.000  |       |       |       | .5718 | .3872 | .2749 | .1742 | .0683 | -.0143 | -.1833 | -.1198 | -.0963 | -.0911 |       |       |
| 70.000  |       |       |       | .4903 | .3129 | .2108 | .1524 | .0349 | -.0818 | -.2236 | -.1639 | -.1357 | -.1370 |       |       |
| 90.000  |       | .5463 |       | .4051 | .2550 | .1997 | .1159 | .0193 | -.1745 | -.4368 | -.5572 | -.4746 | -.5064 |       |       |
| 120.000 |       |       |       | .2213 | .0952 | .0050 | .0458 | .0371 | -.3183 |        |        |        |        |       |       |



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB22)

ALPHA ( 5 ) = 11.985 BETA ( 2 ) = -3.840

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1860  | .1770  | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |         |        |        |        |        |       |
| 180.000 | .9497  | .1157  | -.0073 | -.0112 | -.0449 | .0357  |        | .2088  |        | -1.8743 | -.2975 | -.1524 | -.0879 | -.0848 |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460  |        |        |        |        |       |
| PHI     |        |        |        |        |        |        |        |        |        |         |        |        |        |        |       |
| .000    | .1455  | .0958  | .0297  | -.0691 | -.1170 | -.2184 | -.2786 |        |        | -.3254  | -.2047 |        |        |        |       |
| 40.000  | .1765  | .0567  | -.0372 | -.1207 | -.1260 | -.2239 | -.2239 |        |        | -.2376  | -.1587 |        |        |        |       |
| 70.000  | -.4935 | -.3377 | -.1436 | .0770  | .0203  | -.0019 | -.0537 |        |        |         |        |        |        |        |       |
| 90.000  | -.3552 | -.2397 | -.0632 | .1338  | -.0543 | -.0698 | -.1060 |        |        |         |        |        |        |        |       |
| 105.000 |        |        | -.0084 | .2628  | -.1265 | -.1174 | -.1679 |        |        |         |        |        |        |        |       |
| 110.000 |        |        |        |        |        |        |        | -.2576 |        |         |        |        |        |        |       |
| 120.000 | -.3238 | -.0892 | .0756  | .1671  | -.2776 | -.2087 | -.1773 | -.2079 |        |         |        |        |        |        |       |
| 135.000 |        |        | .0714  | .1387  | -.2733 | -.2067 | -.2249 |        |        |         |        |        |        |        |       |
| 150.000 | -.1895 | -.1033 | .0521  | .2460  | -.2152 | -.1908 | -.1934 |        |        |         |        |        |        |        |       |
| 165.000 | -.1445 |        | .0535  |        | -.0402 | -.1486 | -.1593 |        |        |         |        |        |        |        |       |
| 180.000 | -.1123 | -.0248 | .1088  | .3911  |        |        |        |        |        |         |        |        |        |        |       |

ALPHA ( 5 ) = 12.000 BETA ( 3 ) = .181 MACH = .59774

Q = 596.43 P = 2384.9 RN/L = 4.8734

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460  | .0700  | .1120  | .1580  | .1860  | .1770  | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|-------|-------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|-------|
| PHI     |       |       |       |        |        |        |        |        |        |         |        |        |        |        |       |
| .000    | .9604 | .8183 | .4107 | .2570  | .1752  |        |        | .0668  |        | .0549   | .0547  | .0784  | .1071  | .1505  | .1592 |
| 20.000  |       |       | .4197 | .2623  | .1591  | .0897  |        | .0578  |        | .0360   |        |        |        |        |       |
| 40.000  |       |       | .4188 | .2498  | .1510  | .0912  |        | .0355  |        | -.0193  | -.0263 | .0368  | .0802  | .1087  | .1874 |
| 55.000  |       |       | .3241 | .1576  | .0726  | -.0218 |        | -.1026 |        | -.1767  |        |        |        |        |       |
| 70.000  |       |       | .2506 | .0978  | .026   | -.0048 |        | .1082  |        | .2190   | -.2901 | -.2054 | -.1636 | -.1608 |       |
| 90.000  | .2778 |       | .2110 | .0677  | .0233  | -.0152 |        | -.1175 |        | -.2965  | -.3035 | -.2130 | -.1634 | -.1591 |       |
| 120.000 |       |       | .1255 | .0164  | -.0511 | .0133  |        | -.0502 |        | -.4254  | -.4067 | -.3978 | -.2538 | -.2357 |       |
| 140.000 |       |       |       |        |        |        |        |        |        | -.5682  |        |        |        |        |       |
| 150.000 |       |       | .0445 | .0052  | -.0418 | .0270  |        | .2696  |        | -.7926  | -.4490 | -.1935 | -.1143 | -.1052 |       |
| 162.000 |       |       |       |        |        |        |        |        | -.1341 |         |        |        |        |        |       |
| 165.000 |       |       |       |        |        |        |        |        | -.1630 |         |        |        |        |        |       |
| 169.000 |       |       |       |        |        |        |        | .2966  |        | -1.4519 | -.3217 | -.1546 | -.0799 | -.0763 |       |
| 174.000 |       |       |       |        |        |        |        |        |        |         |        |        |        |        |       |
| 180.000 | .9604 | .1080 | .0072 | -.0076 | -.0290 | .0462  | .4613  | .2561  |        | -1.7015 | -.2832 | -.1449 | -.0744 | -.0706 |       |
| X/LB    | .6520 | .7290 | .7790 | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460  |        |        |        |        |       |
| PHI     |       |       |       |        |        |        |        |        |        |         |        |        |        |        |       |
| .000    | .1521 | .0948 | .0284 | -.0730 | -.1213 | -.2244 | -.2801 |        |        |         |        |        |        |        |       |
| 40.000  | .1656 |       | .0457 | -.0489 | -.1356 | -.1395 | -.2086 |        |        |         |        |        |        |        |       |

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TABULATED PRESSURE DATA - OA148 ( AMES 11-073-1 )

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AMES 11-073(OA148) -14JA/B/C/R ORB FUSELAG.

(XEB822)

ALPHA ( 5 ) = 12.000 BETA ( 3 ) = .181

| SECTION ( 1 ) ORBITER FUSELAGE |  | DEPENDENT VARIABLE CP |       |       |       |       |       |       |       |        |        |
|--------------------------------|--|-----------------------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| X/LB                           |  | .6520                 | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |

|         |        |        |        |       |        |        |        |        |  |  |  |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--|--|--|
| PHI     |        |        |        |       |        |        |        |        |  |  |  |
| 70.000  | -.5085 | -.3776 | -.1867 | .0164 | -.0843 | -.0584 | -.0906 |        |  |  |  |
| 90.000  | -.3630 | -.2621 | -.0866 | .0461 | -.1451 | -.1192 | -.1318 |        |  |  |  |
| 105.000 |        |        | .0041  | .0877 | -.2252 | -.1743 | -.1936 |        |  |  |  |
| 110.000 |        |        |        |       |        |        |        | -.2639 |  |  |  |
| 120.000 | -.2153 | -.1132 | .0577  | .1649 | -.3039 | -.2415 | -.1970 | -.1983 |  |  |  |
| 135.000 |        |        | .0362  | .3145 | -.3312 | -.2443 | -.2265 |        |  |  |  |
| 150.000 | -.1481 | -.0730 | .1048  | .4878 | -.3240 | -.2574 | -.2178 |        |  |  |  |
| 165.000 | -.0903 |        | .1309  |       | -.1698 | -.2605 | -.1720 |        |  |  |  |
| 180.000 | -.0877 | -.0034 | .1450  | .4475 |        |        |        |        |  |  |  |

ALPHA ( 5 ) = 12.027 BETA ( 4 ) = 4.252 MACH = .53774 Q = 596.43 P = 2384.9 RN/L = 4.8734

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB |  | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|------|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|------|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|

|         |       |       |       |        |        |        |       |  |        |        |         |        |        |        |        |  |
|---------|-------|-------|-------|--------|--------|--------|-------|--|--------|--------|---------|--------|--------|--------|--------|--|
| PHI     |       |       |       |        |        |        |       |  |        |        |         |        |        |        |        |  |
| .000    | .9417 | .7943 | .3943 | .2503  | .1538  |        | .0611 |  | .0574  | .0424  | .0481   | .0662  | .0979  | .1472  | .1535  |  |
| 20.000  |       |       | .3636 | .2234  | .1219  | .0825  | .0155 |  | .0239  | .0067  |         |        |        |        |        |  |
| 40.000  |       |       | .3029 | .1685  | .0825  | .0155  |       |  | -.0354 | -.0946 | -.1022  | -.0346 | .0224  | .0710  | .1578  |  |
| 55.000  |       |       | .1823 | .0266  | -.0435 | -.1236 |       |  | -.1817 | -.2468 |         |        |        |        |        |  |
| 70.000  |       |       | .1280 | -.0098 | -.0801 | -.0709 |       |  | -.1691 | -.2789 | -.3170  | -.2333 | -.1915 | -.1915 |        |  |
| 90.000  | .1138 |       | .1107 | -.0176 | -.0549 | -.0769 |       |  | -.1805 | -.3571 | -.3226  | -.2223 | -.1673 | -.1616 |        |  |
| 120.000 |       |       | .0693 | -.0278 | -.0872 | -.0178 |       |  | -.1108 | -.4807 | -.3897  | -.3320 | -.1642 | -.1398 |        |  |
| 140.000 |       |       |       |        |        |        |       |  |        | -.6132 |         |        |        |        |        |  |
| 150.000 |       |       | .0216 | -.0169 | -.0682 | .0083  |       |  | .1719  | -.8109 | -.3890  | -.1704 | -.0794 | -.0820 |        |  |
| 162.000 |       |       |       |        |        |        |       |  |        | -.2362 |         |        |        |        |        |  |
| 165.000 |       |       |       |        |        |        |       |  |        | -.2502 |         |        |        |        |        |  |
| 169.000 |       |       |       |        |        |        |       |  |        |        | -.14050 | -.3016 | -.1523 | -.0721 | -.0725 |  |
| 174.000 |       |       |       |        |        |        |       |  |        |        |         |        |        |        |        |  |
| 180.000 | .9417 | .0823 | .0095 | -.0169 | -.0435 | .0367  | .4119 |  | .2502  |        |         |        |        |        |        |  |

| X/LB |  | .6520 | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |
|------|--|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
|------|--|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|

|         |        |        |        |        |        |        |        |        |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--|--|--|
| PHI     |        |        |        |        |        |        |        |        |  |  |  |
| .000    | .1421  | .0969  | .0260  | -.0715 | -.1176 | -.2157 | -.3806 |        |  |  |  |
| 40.000  | .1511  |        | .0377  | -.0507 | -.1398 | -.1495 | -.936  |        |  |  |  |
| 70.000  | -.5092 | -.3918 | -.2132 | -.0550 | -.1496 | -.1133 | -.279  |        |  |  |  |
| 90.000  | -.3699 | -.2905 | -.1354 | -.0664 | -.2210 | -.1639 | -.607  |        |  |  |  |
| 105.000 |        |        | -.0755 | -.0283 | -.3304 | -.2257 | -.7234 |        |  |  |  |
| 110.000 |        |        |        |        |        |        |        | -.3014 |  |  |  |
| 120.000 | -.2016 | -.1673 | -.0517 | .0192  | .4133  | -.3113 | -.2571 | -.2172 |  |  |  |
| 135.000 |        |        | .0708  | .3677  | -.3908 | -.2784 | -.2556 |        |  |  |  |
| 150.000 | -.1066 | -.0410 | .1210  | .4223  | -.4212 | -.3297 | -.2671 |        |  |  |  |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8822)

ALPHA ( 5 ) = 12.027 BETA ( 4 ) = 4.252

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

155.000 -.0929 .1097  
180.000 -.1167 -.0306 .1012 .3991  
-.2924 -.3361 -.1700

ALPHA ( 5 ) = 12.070 BETA ( 5 ) = 8.324 MACH = .59774 Q = 596.43 P = 2384.9 RN/L = 4.8734

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 .8794 .7559 .3640 .2348 .1256 .0698 .0210 .0340 .0328 .0354 .0524 .0950 .1354 .1423  
20.000 .2913 .1689 .0476 .0194 -.0727 .0194 -.1298 -.0130  
40.000 .1584 .0476 .0194 -.0727 .0194 -.1298 -.0130  
55.000 .0264 .1057 .1648 .2178 .2712 .3248 .3800 .4360 .4924 .5488 .6052 .6616 .7180  
70.000 -.0107 .1200 .1733 .2173 .2613 .3053 .3593 .4133 .4673 .5213 .5753 .6293 .6833 .7373  
90.000 -.0024 .1146 .1341 .1314 .1314 .1314 .1314 .1314 .1314 .1314 .1314 .1314 .1314 .1314  
120.000 -.0024 .1146 .1341 .1314 .1314 .1314 .1314 .1314 .1314 .1314 .1314 .1314 .1314 .1314  
140.000 -.0195 .1086 .1536 .0745 .0539 .0539 .0539 .0539 .0539 .0539 .0539 .0539 .0539 .0539  
150.000 -.0467 .0689 .1184 .0438 .0438 .0438 .0438 .0438 .0438 .0438 .0438 .0438 .0438 .0438  
162.000 .8794 .7559 .3640 .2348 .1256 .0698 .0210 .0340 .0328 .0354 .0524 .0950 .1354 .1423  
165.000 .2913 .1689 .0476 .0194 -.0727 .0194 -.1298 -.0130  
169.000 .1584 .0476 .0194 -.0727 .0194 -.1298 -.0130  
174.000 .0264 .1057 .1648 .2178 .2712 .3248 .3800 .4360 .4924 .5488 .6052 .6616 .7180  
180.000 -.0107 .1200 .1733 .2173 .2613 .3053 .3593 .4133 .4673 .5213 .5753 .6293 .6833 .7373-.3666  
-.3825

-1.3525 -.3005 -.1550 -.0924 -.1062

.1821

.1401

.9990 1.0180 1.0460

X/LB

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .1371 .0921 .0228 -.0855 -.1249 -.2257 -.2927  
40.000 .1357 .0370 .0649 -.0649 -.1499 -.1573 -.1955  
70.000 .4934 .4163 .2432 .1219 .1910 .1466 .1521  
90.000 .3634 .3350 .2064 .1497 .2873 .2051 .1806  
105.000 .1673 .1377 .4467 .2902 .2628  
110.000 .2227 .2361 .1239 .0509 .5398 .3918 .3213  
120.000 .1357 .0370 .0649 -.0649 -.1499 -.1573 -.1955  
135.000 .4934 .4163 .2432 .1219 .1910 .1466 .1521  
150.000 .3634 .3350 .2064 .1497 .2873 .2051 .1806  
165.000 .1673 .1377 .4467 .2902 .2628  
180.000 .2227 .2361 .1239 .0509 .5398 .3918 .3213-.3182  
-.2541

.3380

.1401

.9990 1.0180 1.0460

.3359 -.2116  
-.1867 -.1229.3182  
-.2541

.3380

.1401

.9990 1.0180 1.0460

.3359 -.2116  
-.1867 -.1229.3182  
-.2541

.3380

.1401

.9990 1.0180 1.0460

.3359 -.2116  
-.1867 -.1229.3182  
-.2541

.3380

.1401

.9990 1.0180 1.0460

.3359 -.2116  
-.1867 -.1229.3182  
-.2541

.3380

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AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE (XE8823) ( 05 AUG 75 )

## PARAMETRIC DATA

|       |   |           |        |      |   |           |     |    |
|-------|---|-----------|--------|------|---|-----------|-----|----|
| SREF  | = | 2690.0000 | 50.FT. | XMRP | = | 1076.6800 | IN. | X0 |
| LREF  | = | 474.8000  | IN.    | YMRP | = | .0000     | IN. | Y0 |
| BREF  | = | 936.0680  | IN.    | ZMRP | = | 375.0000  | IN. | Z0 |
| SCALE | = | .0300     |        |      |   |           |     |    |

|          |      |          |       |
|----------|------|----------|-------|
| RUDDER = | .000 | SFDBRK = | .000  |
| BOFLAP = | .000 | I-ELVN = | .000  |
| R-ELVN = | .000 | MACH =   | 1.400 |

ALPHA ( 1 ) = -3.999    BETA ( 1 ) = -3.856    MACH = 1.3924    Q = 598.36    P = 440.69    RN/L = 2.9021

SECTION (1) ORBITER FUSELAGE

|      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| X/LB | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|

PHI

[illegible]

7337  
7983

**1.0527**

1300

-.2452    -.2890    -.1431    -.1212    -.0967

1.0460

**87/x**

143

|        |        |        |        |        |        |        |        |
|--------|--------|--------|--------|--------|--------|--------|--------|
| -.0212 | -.0205 | -.0395 | -.0991 | -.1675 | -.2153 | -.2735 |        |
| -.0675 |        | -.0754 | -.1100 | -.1818 | -.1658 | -.3109 |        |
| -.0830 | .0110  | -.0443 | .1955  | .1457  | .0565  | .0539  |        |
| -.0916 | .0531  | .0597  | .1936  | .1119  | .0447  | .0021  |        |
|        |        | .1963  | .2369  | .0254  | -.0227 | -.0539 |        |
| -.0328 | .0537  | .3496  | .2809  | .0634  | -.0615 | -.0320 | -.1647 |
|        |        | .4027  | .4204  | .1080  | .0685  | .0515  | -.1463 |
| -.0074 | .0431  | .3852  | .4060  | .1630  | .1910  | .0994  |        |
| -.0165 |        | .3772  |        | .4830  | .3005  | -.2347 |        |
| .0239  | .0142  | .3750  | .4203  |        |        |        |        |

1647.

1463  
1491

...

**Abstract**

1000

DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8823)

ALPHA ( 1 ) = -3.926 BETA ( 2 ) = .190 MACH = 1.3924 Q = 598.36 P = 440.89 RN/L = 2.9021

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000   | 1.4733 | .6718 | .2095 | .0857 | .0118  |        | -.0592 | -.0258 | .0003  | -.0169 | -.0404 | -.6502 | -.0549 |       |
| 20.000  |        | .2418  |       | .0926 | .0061 | -.0533 |        | -.0531 | -.0426 |        |        |        |        |        |       |
| 40.000  |        | .3831  |       | .1129 | .0500 | -.0502 |        | -.1133 | -.1133 |        |        |        |        |        |       |
| 55.000  |        | .5001  |       | .2352 | .1654 | .0392  |        | .0699  | .0310  |        |        |        |        |        |       |
| 70.000  |        | .5747  |       | .3049 | .2169 | .1288  |        | .0751  | .0751  |        |        |        |        |        |       |
| 90.000  |        | .6344  | .7938 | .3771 | .2278 | .1600  |        | .2017  | -.0107 |        |        |        |        |        |       |
| 120.000 |        | .7121  |       | .5202 | .3514 | .3760  |        | .4552  | .0464  |        |        |        |        |        |       |
| 140.000 |        |        |       |       |       |        |        |        | -.0697 |        |        |        |        |        |       |
| 150.000 |        | .7348  |       | .6056 | .4444 | .5127  |        | .9225  | -.1694 |        |        |        |        |        |       |
| 160.000 |        |        |       |       |       |        |        |        |        |        |        |        |        |        |       |
| 174.000 |        |        |       |       |       |        |        |        |        |        |        |        |        |        |       |
| 180.000 | 1.4733 | 1.0060 | .7269 | .6063 | .4816 | .5517  | 1.0888 | 1.0265 | -.1531 | -.2763 | -.1473 | -.1246 | -.0770 |        |       |
| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790 | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |

PHI

| X/LB    | .000 | .0170  | -.0154 | -.0356 | -.0910 | -.1663 | -.2119 | -.2705 | -.2587 | -.2676 |  |  |  |  |  |
|---------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|--|--|--|--|
| 40.000  |      | -.0425 |        | -.0556 | -.0954 | -.1697 | -.1624 | -.2847 |        |        |  |  |  |  |  |
| 70.000  |      | .0567  | .0060  | .0041  | .2260  | .1041  | .0126  | .0015  |        |        |  |  |  |  |  |
| 90.000  |      | .0679  | .0358  | .1497  | .1854  | .0577  | -.0054 | -.0349 |        |        |  |  |  |  |  |
| 105.000 |      |        |        | .2695  | .2188  | -.0225 | -.053  | -.0823 |        |        |  |  |  |  |  |
| 110.000 |      | .0349  | .0524  | .2981  | .1264  | .0179  | -.1197 | -.1268 |        |        |  |  |  |  |  |
| 120.000 |      |        |        | .3869  | .3918  | .0748  | .0129  | -.0204 |        |        |  |  |  |  |  |
| 135.000 |      | .0079  | .0443  | .3971  | .4149  | .1609  | .0980  | .0250  |        |        |  |  |  |  |  |
| 150.000 |      | .0010  |        | .4011  | .4142  | .1870  | -.3010 |        |        |        |  |  |  |  |  |
| 165.000 |      | -.0071 | .0259  | .4088  | .5009  |        |        |        |        |        |  |  |  |  |  |

ALPHA ( 1 ) = -3.986 BETA ( 3 ) = 4.279 MACH = 1.3924 Q = 598.36 P = 440.89 RN/L = 2.9021

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230 | .0460 | .0700 | .1120  | .1580 | .1650  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|--------|-------|-------|-------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | 1.4621 | .6567 | .2036 | .0657 | .0150  |       | -.0646 | -.0481 | -.0100 | -.0155 | -.0422 | -.0683 | -.0630 |       |
| 20.000  |       | .2129  |       | .0747 | .0040 | -.0447 |       | -.0540 | -.0379 |        |        |        |        |        |       |
| 40.000  |       | .3197  |       | .0870 | .0299 | -.0526 |       | -.0407 | -.0844 |        |        |        |        |        |       |
| 55.000  |       | .4115  |       | .1577 | .1013 | -.0121 |       | .0356  | -.0028 |        |        |        |        |        |       |
| 70.000  |       | .4743  |       | .2084 | .1323 | .0519  |       | .0945  | .0156  |        |        |        |        |        |       |
| 90.000  |       | .5331  | .6445 | .2747 | .1347 | .0692  |       | .1142  | -.3075 |        |        |        |        |        |       |
| 120.000 |       | .6195  |       | .4335 | .2638 | .2821  |       | .3476  | -.0629 |        |        |        |        |        |       |

(52883X)

AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

$$\text{ALPHA} (1) = -3.986 \quad \text{BETA} (3) = 4.279$$

## SECTION ( ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

[illegible]

## 617/X

**PHI**

| PHI     | -.0370 | -.0169 | -.0462 | -.0946 | -.1644 | -.2078 | -.2727 |
|---------|--------|--------|--------|--------|--------|--------|--------|
| .000    | -.0214 |        | -.0377 | -.0813 | -.1675 | -.1634 | -.2679 |
| 40.000  | -.0438 | -.0220 | .0041  | .2281  | .0389  | .0153  | .0367  |
| 70.000  | .0347  | .0032  | .1420  | .2096  | .0345  | -.0558 | -.0777 |
| 90.000  |        |        | .2657  | .1891  | -.0586 | -.0913 | -.1199 |
| 110.000 |        |        |        |        |        |        | -.2277 |
| 120.000 | .0217  | .0413  | .2717  | .0273  | -.0695 | -.1979 | -.2942 |
| 135.000 |        |        | .3384  | .3495  | .0295  | -.0583 | -.1042 |
| 150.000 | -.0115 | .0230  | .3653  | .3670  | .1212  | .0118  | -.0676 |
| 165.000 | -.0181 |        | .3665  |        | .3478  | .1081  | -.3300 |
| 180.000 | -.0244 | .0213  | .3809  | .4288  |        |        |        |

|               |      |              |        |      |          |   |          |   |          |      |          |
|---------------|------|--------------|--------|------|----------|---|----------|---|----------|------|----------|
| ALPHA ( 2 ) = | .006 | BETA ( 1 ) = | -3.677 | MACH | = 1.3947 | Q | = 599.32 | P | = 440.18 | RN/L | = 2.9066 |
|---------------|------|--------------|--------|------|----------|---|----------|---|----------|------|----------|

## SECTION ( ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

[illegible]



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8823)

ALPHA ( 2 ) = .011 BETA ( 2 ) = .183

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |       |        |        |        |        |        |        |
| 70.000  | -.0001 | -.1016 | -.1224 | .0685 | .0193  | -.0543 | -.0584 |        |        |        |
| 90.000  | .0310  | -.0402 | .0210  | .0960 | -.0257 | -.0586 | -.1004 |        |        |        |
| 105.000 |        |        | .1534  | .1229 | -.1276 | -.1229 | -.1460 |        |        |        |
| 110.000 |        |        |        |       |        |        |        | -.2470 |        |        |
| 120.000 | .0079  | .0029  | .2619  | .1968 | .0007  | -.1527 | -.2200 | -.2255 |        |        |
| 135.000 |        |        | .2847  | .3343 | .0745  | -.0384 | -.0791 |        |        |        |
| 150.000 | -.0001 | .0265  | .2911  | .3511 | .1102  | .0504  | -.0305 |        |        |        |
| 165.000 | -.0072 |        | .3081  |       | .3336  | .1281  | -.2880 |        |        |        |
| 180.000 | -.0162 | .0150  | .3216  | .4245 |        |        |        |        |        |        |

ALPHA ( 2 ) = .023 BETA ( 3 ) = .4256 MACH = 1.3947 Q = 599.32 P = .25 J .3010 .3780 .4970 .5740 RN/L = 2.9066

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660  | .1770  | .2040  | .25 J  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |        |        |        |        |        |        |        |       |
| 000     | 1.4711 | .7862 | .3258 | .1487 | .0900 | .0129 |       | -.0146 | -.0187 | -.0073 | .0222  | .0034  | -.0312 | -.0350 |       |
| 20.000  |        |       | .3225 | .1524 | .0691 | .0176 |       | -.0125 | -.0283 | -.0042 | -.0241 | -.0094 | -.0521 | -.0321 |       |
| 40.000  |        |       | .3983 | .1671 | .0997 |       |       | .0000  | -.0269 |        |        |        |        |        |       |
| 55.000  |        |       | .4543 | .2109 | .1514 | .0428 |       | .0528  | .0564  |        |        |        |        |        |       |
| 70.000  |        |       | .4863 | .2280 | .1561 | .0665 |       | .1067  | .0704  | -.2572 | -.1904 | -.1562 | -.0516 |        |       |
| 90.000  | .6195  |       | .5227 | .2740 | .1474 | .0750 |       | .1542  | -.0347 | -.2720 | -.2751 | -.1778 | -.0535 |        |       |
| 120.000 |        |       | .5676 | .3903 | .2247 | .2152 |       | .3649  | -.0369 | -.2691 | -.4530 | -.1928 | -.0670 |        |       |
| 140.000 |        |       | .5859 | .4870 | .3094 | .3043 |       | .8198  | -.1976 | -.3581 | -.2447 | -.2039 | -.0874 |        |       |
| 151.000 |        |       |       |       |       |       |       | .5332  | -.2474 |        |        |        |        |        |       |
| 162.000 |        |       |       |       |       |       |       | .6349  |        |        |        |        |        |        |       |
| 165.000 |        |       |       |       |       |       |       |        | -.2172 | -.3662 | -.1892 | -.1878 | -.0976 |        |       |
| 169.000 |        |       |       |       |       |       |       |        |        |        |        |        |        |        |       |
| 174.000 |        |       |       |       |       |       |       |        |        |        |        |        |        |        |       |
| 180.000 | 1.4711 | .8615 | .6124 | .5150 | .3741 | .3679 | .9739 | .9720  | -.3207 | -.3409 | -.2115 | -.1728 | -.1026 |        |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |

PHI

| X/LB    | .000   | .0119  | .0050  | -.0353 | -.0982 | -.1459 | -.2144 |
|---------|--------|--------|--------|--------|--------|--------|--------|
| 40.000  | -.0241 |        | .0192  | -.0165 | -.1016 | -.1008 | -.2000 |
| 70.000  | -.0142 | -.1174 | -.0371 | .0855  | -.0004 | -.0876 | -.1038 |
| 90.000  | -.0134 | -.0166 | .0348  | .0899  | -.0611 | -.0949 | -.1319 |
| 105.000 |        |        | .1693  | .1300  | -.1621 | -.1670 | -.1799 |
| 110.000 |        |        |        |        |        |        |        |
| 120.000 | .0142  | .0060  | .2263  | .0501  | -.0755 | -.2207 | -.3207 |
| 135.000 |        |        | .2797  | .2907  | -.0007 | -.1019 | -.1440 |
| 150.000 | -.0125 | .0230  | .3040  | .2929  | .0795  | -.0320 | -.1097 |

-.2738  
-.2812

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB823)

ALPHA ( 2 ) = .023 BETA ( 3 ) = 4.256

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .6520 .7250 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 -.0231 .3033 .2463 .0583 -.3174  
180.000 -.0300 .3106 .3199

ALPHA ( 3 ) = 3.926 BETA ( 1 ) = -3.879 MACH = 1.3946 Q = 599.62 P = 440.42 RN/L = 2.9033

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.4675 .9250 .4360 .2628 .1642 .0415 .0323 .0366 .0359 .0506 .0221 .0151  
20.000 .4800 .2927 .1747 .0738 .0619 .0191 .0191 .0191 .0191 .0191 .0191 .0191  
40.000 .6235 .3504 .2530 .1307 .0886 .0203 .0203 .0203 .0203 .0203 .0203 .0203  
55.000 .6895 .4370 .3449 .2082 .1835 .1737 .1737 .1737 .1737 .1737 .1737 .1737  
70.000 .6995 .4448 .3411 .2307 .1914 .2100 .2100 .2100 .2100 .2100 .2100 .2100  
90.000 .6985 .4615 .3302 .2363 .2666 .1885 .1885 .1885 .1885 .1885 .1885 .1885  
120.000 .6589 .4705 .3323 .2996 .1722 .1722 .1722 .1722 .1722 .1722 .1722 .1722  
140.000 .5555 .4446 .2722 .2927 .1044 .1044 .1044 .1044 .1044 .1044 .1044 .1044  
150.000 .5555 .4446 .2722 .2927 .9366 .9366 .9366 .9366 .9366 .9366 .9366 .9366  
151.000 .5555 .4446 .2722 .2927 .7039 .7039 .7039 .7039 .7039 .7039 .7039 .7039  
152.000 .5555 .4446 .2722 .2927 .7461 .7461 .7461 .7461 .7461 .7461 .7461 .7461  
165.000 .5555 .4446 .2722 .2927 .9861 .9861 .9861 .9861 .9861 .9861 .9861 .9861  
174.000 .5555 .4446 .2722 .2927 .9494 .9494 .9494 .9494 .9494 .9494 .9494 .9494  
180.000 1.4675 .7599 .4788 .4140 .2533 .2733 .2733 .2733 .2733 .2733 .2733 .2733

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .0386 .0457 .0634 .0276 -.0357 -.0871 -.1600 -.1506 -.1563  
40.000 .0508 .0611 .0611 .0240 -.0547 -.0419 -.1522 -.1600 -.1501  
70.000 -.0526 -.1550 -.2001 -.0911 -.0236 -.0750 -.0585  
90.000 -.0125 -.0933 -.1699 .0513 -.0656 -.0982 -.1365  
100.000 .1120 .1120 .1140 .1140 .1025 .2010 .1745  
110.000 .0980 -.1047 .1973 .1510 -.0147 -.1644 -.2175  
120.000 .2271 .2271 .2319 -.0214 -.1287 -.0892  
135.000 .2285 .2285 .2312 -.0550 .0460 -.0268  
150.000 .2356 .2356 .2776 .1737 -.2445  
165.000 .0357 .0572 .2724  
180.000 .0357 .0572 .2724

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8823)

ALPHA ( 3 ) = 3.958 BETA ( 2 ) = .183 MACH = 1.3946 Q = 599.62 P = 440.42 RN/L = 2.9033

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000   | 1.4746 | .9251 | .4419 | .2648 | .1753 |       | .0486 | .0337  | .0249  | .0556  | .0530  | .0226  | .0234  |       |
| 20.000  |        |        | .4569 | .2714 | .1686 | .0856 |       | .0491 | .0249  |        |        |        |        |        |       |
| 40.000  |        |        | .5508 | .3034 | .2218 | .1092 |       | .0758 | .0125  | .0681  | .0359  | .0470  | .0117  | .0175  |       |
| 55.000  |        |        | .5904 | .3399 | .2688 | .1378 |       | .1196 | .1118  |        |        |        |        |        |       |
| 70.000  |        |        | .5925 | .3373 | .2564 | .1480 |       | .1257 | .1533  | -.1799 | -.1063 | -.1023 | -.1120 |        |       |
| 90.000  |        | .7336  | .5999 | .3556 | .2422 | .1513 |       | .2054 | .1084  | -.1878 | -.1742 | -.1472 | -.0919 |        |       |
| 120.000 |        |        | .5858 | .4057 | .2643 | .2364 |       | .4808 | .0812  | -.1950 | -.3670 | -.2020 | -.1024 |        |       |
| 140.000 |        |        |       |       |       |       |       |       | -.0014 |        |        |        |        |        |       |
| 150.000 |        |        | .5340 | .4341 | .2531 | .2736 |       | .8425 | -.2079 | -.3984 | -.2934 | -.1745 | -.0589 |        |       |
| 151.000 |        |        |       |       |       |       |       |       | .5194  |        |        |        |        |        |       |
| 162.000 |        |        |       |       |       |       |       |       | .6911  |        |        |        |        |        |       |
| 165.000 |        |        |       |       |       |       |       |       |        | -.2444 | -.3640 | -.2550 | -.1882 | -.0609 |       |
| 169.000 |        |        |       |       |       |       | .9445 | .9480 |        |        |        |        |        |        |       |
| 174.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 180.000 | 1.4746 | .7486  | .4961 | .4159 | .2756 | .2800 |       | .9364 | -.3852 | -.3952 | -.2144 | -.1920 | -.0578 |        |       |
| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |

## PHI

|         |        |        |        |        |        |        |        |        |        |        |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|--|--|--|--|
| .000    | .0286  | .0599  | .0691  | .0364  | -.0317 | -.0799 | -.1595 |        | -.1501 | -.1562 |  |  |  |  |  |
| 40.000  |        | .0594  | .0760  | .0393  | -.0372 | -.0442 | -.1446 |        | -.1634 | -.1862 |  |  |  |  |  |
| 70.000  | -.0628 | -.1800 | -.1982 | -.0348 | -.0542 | -.1126 | -.1086 |        |        |        |  |  |  |  |  |
| 90.000  | -.0168 | -.1224 | -.1212 | .0349  | -.1253 | -.1255 | -.1581 |        |        |        |  |  |  |  |  |
| 105.000 |        |        | .0806  | .0814  | -.1607 | -.2357 | -.1953 |        |        |        |  |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        | -.2820 |        |        |  |  |  |  |  |
| 120.000 | -.0273 | -.0447 | .1924  | .1300  | -.0358 | -.1832 | -.2520 | -.2808 |        |        |  |  |  |  |  |
| 135.000 |        |        | .2000  | .2470  | .0328  | -.0850 | -.1259 |        |        |        |  |  |  |  |  |
| 150.000 | -.0183 | .0028  | .2083  | .3394  | .0832  | -.0021 | -.0790 |        |        |        |  |  |  |  |  |
| 165.000 | -.0213 |        | .2149  |        | .2729  | .0778  | -.2687 |        |        |        |  |  |  |  |  |
| 180.000 | -.0252 | .0019  | .2256  | .4008  |        |        |        |        |        |        |  |  |  |  |  |

ALPHA ( 3 ) = 3.971 BETA ( 3 ) = 4.247 MACH = 1.3946 Q = 599.62 P = 440.42 RN/L = 2.9033

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|-------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|-------|
| PHI     | .000  | 1.4606 | .9135 | .4364 | .2598 | .1798 |       | .0417 | .0283  | .0235  | .0423  | .0594  | .0197  | .0144 |       |
| 20.000  |       |        | .4257 | .2481 | .1532 | .0773 |       | .0391 | .0150  |        |        |        |        |       |       |
| 40.000  |       |        | .4674 | .2448 | .1722 | .0798 |       | .0538 | -.0003 | .0615  | .0278  | .0406  | -.0126 | .0023 |       |
| 55.000  |       |        | .4839 | .2534 | .1924 | .0718 |       | .0604 | .0641  |        |        |        |        |       |       |
| 70.000  |       |        | .4665 | .2415 | .1725 | .0739 |       | .0675 | .1032  | -.2199 | -.1579 | -.1520 | -.1194 |       |       |
| 90.000  |       | .5820  | .5013 | .2624 | .1509 | .0718 |       | .1508 | .0331  | -.2377 | -.2311 | -.1926 | -.0987 |       |       |
| 120.000 |       |        | .5063 | .3380 | .1976 | .1723 |       | .3725 | -.0032 | -.2733 | -.4229 | -.1736 | -.0761 |       |       |



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ALPHA ( 4 ) = 7.933 BETA ( 1 ) = -3.869

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(XE8823)

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

180.000 1.4349 .6190 .3587 .3151 .1775 .1842 .8622 -.3821 -.4202 -.2724 -.2160 -.0688

X/LB

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.0000 .0986 .1142 .1294 .0953 .0341 -.0176 -.0959

40.000

.1339 .1493 .1064 .0124 .0117 -.0900

70.000

-.1347 -.2425 .2382 -.1410 -.1390 -.0826

90.000

-.0866 -.1925 .2399 -.0369 -.1396 -.1992 -.2153

105.000

-.1215 .0235 .1612 -.2657 -.2809

110.000

-.1893 -.1751 .0789 .0631 -.0642 -.2012 -.2442

120.000

.0642 .1223 .1223 -.0516 -.1364 -.1266

135.000

-.0882 -.0280 .0602 .1194 -.0307 -.0020 -.0957

150.000

-.0612 .0730 .0730 .2427 .1296 -.2815

165.000

-.0533 -.0275 .1330 .3185

180.000

ALPHA ( 4 ) = 7.908 BETA ( 2 ) = .178 MACH = 1.3941 Q = 599.51 P = 440.65 RN/L = 2.9093

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.0000 1.4422 1.0430 .5582 .3780 .2707 .1139 .1139 .0974 .0747 .0739 .1040 .0839 .0803

20.000

.5718 .3787 .2707 .1620 .1174 .1174 .0814 .0659 .1000 .0998 .0991 .0981 .0791

40.000

.6295 .3986 .2958 .1735 .1314 .1314 .0750 .1480 .1487 .0832 .0920 .1542

50.000

.6169 .3810 .2958 .1572 .1314 .1314 .1480 .1488 .1626 .1236 .1376 .1667

70.000

.5449 .3440 .2579 .1574 .1212 .1212 .1032 .1032 .1836 .3565 .3315 .1747

90.000

.5058 .3340 .2337 .1370 .1834 .1834 .0155 .0155 .4357 .3436 .1858 .0721

120.000

.5071 .3274 .2118 .1938 .1938 .1938 .6085 .6085 .2839 .4011 .2947 .1993 .0525

150.000

.4303 .3350 .1824 .1938 .1938 .1938 .6629 .6629 .2839 .4011 .2947 .1993 .0525

162.000

.151.000 .162.000 .155.000 .162.000 .174.000 .174.000 .174.000 .174.000 .174.000 .174.000 .174.000 .174.000 .174.000 .174.000

180.000

1.4422 .6085 .3762 .3293 .1940 .1974 .8440 .8440 .4171 .4333 .2518 .2086 .0444

X/LB

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.0000 .0902 .1240 .1463 .1131 .0449 -.0079 -.0903

40.000

.1200 .1595 .1225 .1225 .0386 .0126 -.0848

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB823)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 7.908 BETA ( 2 ) = .178

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| 70.000  | -.1365 | -.2503 | -.2685 | -.1035 | -.1549 | -.1637 | -.1429 |        |        |        |
| 91.000  | -.0780 | -.1852 | -.2296 | -.0176 | -.1955 | -.2141 | -.2034 |        |        |        |
| 105.000 |        |        | -.0411 | .0499  | -.2281 | -.3022 | -.2758 |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.3127 |        |        |
| 120.000 | -.0730 | -.0873 | .0893  | .0415  | -.0863 | -.2127 | -.2779 | -.3282 |        |        |
| 135.000 |        |        | .0914  | .1439  | -.0223 | -.1271 | -.1737 |        |        |        |
| 150.000 | -.0406 | -.0428 | .0883  | .3685  | .0323  | -.0584 | -.1196 |        |        |        |
| 165.000 | -.0321 |        | .0385  |        | .2339  | .0138  | -.2265 |        |        |        |
| 180.000 | -.0306 | -.0202 | .1194  | .4136  |        |        |        |        |        |        |

ALPHA ( 4 ) = 7.872 BETA ( 3 ) = 4.245 MACH = 1.3941 Q = 599.51 P = 440.63 RN/L = 2.9093

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 20.000  | 1.4307 | 1.0313 | .5463 | .3759 | .2658 |       |       | .1100 | .0826  | .0749  | .0706  | .1078  | .0781  | .0735  |       |
| 40.000  |        |        | .5288 | .3505 | .2319 | .1394 |       | .0970 | .0656  | .0558  | .0689  | .0862  | .0392  | .0543  |       |
| 55.000  |        |        | .5343 | .3386 | .2426 | .1299 |       | .0999 | .0286  | .0193  |        |        |        |        |       |
| 70.000  |        |        | .5009 | .2836 | .2091 | .0760 |       | .0596 | .0193  |        |        |        |        |        |       |
| 90.000  |        | .5398  | .4783 | .2459 | .1716 | .0831 |       | .0618 | .0988  | -.1850 | -.1347 | -.1483 | -.1981 |        |       |
| 120.000 |        |        | .4716 | .2421 | .1541 | .0665 |       | .0876 | .0735  | -.2113 | -.1772 | -.1888 | -.1554 |        |       |
| 140.000 |        |        | .4428 | .2696 | .1596 | .1334 |       | .3818 | .0231  | -.2580 | -.3984 | -.2275 | -.1029 |        |       |
| 150.000 |        |        | .3922 | .3196 | .1425 | .1583 |       | .7416 | -.0924 | -.4452 | -.3336 | -.1841 | -.0585 |        |       |
| 162.000 |        |        |       |       |       |       |       |       | .5124  |        |        |        |        |        |       |
| 165.000 |        |        |       |       |       |       |       |       | .5857  |        |        |        |        |        |       |
| 169.000 |        |        |       |       |       |       |       |       |        | -.2969 | -.4349 | -.2643 | -.2140 | -.0576 |       |
| 174.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 180.000 | 1.4307 | .5858  | .3750 | .3438 | .1963 | .1843 | .8029 | .8521 |        |        |        |        |        |        |       |

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| 40.000  | .0923  | .1235  | .1348  | .1084  | .0417  | -.0677 | -.0936 |        |        |        |
| 70.000  | .1031  | .1625  | .1625  | .1267  | .0395  | .0019  | -.0922 | -.1047 | -.1109 |        |
| 90.000  | -.1241 | -.2384 | -.2646 | -.0977 | -.1451 | -.1744 | -.1974 | -.1320 | -.1542 |        |
| 105.000 | -.0666 | -.1733 | -.1485 | -.0332 | -.2172 | -.2071 | -.2006 |        |        |        |
| 110.000 |        |        | .0246  | .0008  | -.2794 | -.3339 | -.2758 |        |        |        |
| 120.000 | -.0466 | -.0624 | .0715  | -.0696 | -.1281 | -.2731 | -.3673 |        |        |        |
| 130.000 |        |        | .1417  | .2200  | -.0757 | -.1722 | -.2124 |        |        |        |
| 150.000 | -.0315 | -.0211 | .1616  | .3010  | -.0453 | -.1287 | -.1864 |        |        |        |

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(XEBB23)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 7.872 BETA ( 3 ) = 4.245

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790 | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|--------|--------|-------|-------|-------|--------|--------|-------|--------|--------|
| Phi     |        |        |       |       |       |        |        |       |        |        |
| 165.000 | -.0384 |        | .1096 |       | .1787 | -.0846 | -.3129 |       |        |        |
| 180.000 | -.0496 | -.0146 | .1063 | .2954 |       |        |        |       |        |        |

ALPHA ( 5 ) = 11.931 BETA ( 1 ) = -3.857 MACH = 1.3942 Q = 599.92 P = 440.89 RAVL = 2.9149

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0000  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|
| Phi     |        |        |       |       |       |       |       |       |       |        |        |        |        |        |       |
| .000    | 1.3856 | 1.1480 | .6732 | .4884 | .3517 |       |       | .1813 |       | .1635  | .1385  | .1232  | .1432  | .1456  | .1481 |
| 20.000  |        |        | .7169 | .5097 | .3577 | .2490 |       | .2000 |       | .1542  |        |        |        |        |       |
| 40.000  |        |        | .7879 | .5505 | .4207 | .2929 |       | .2463 |       | .1547  | .1721  | .1797  | .1757  | .1408  | .1673 |
| 55.000  |        |        | .7445 | .5137 | .4022 | .2442 |       | .2044 |       | .1340  |        |        |        |        |       |
| 70.000  |        |        | .6737 | .4530 | .3361 | .2328 |       | .1874 |       | .1251  | -.0754 | -.2110 | -.0203 | -.1014 |       |
| 90.000  |        | .7643  | .6150 | .4089 | .2953 | .1931 |       | .1808 |       | .2234  | -.1018 | -.0376 | -.0705 | -.1381 |       |
| 120.000 |        |        | .4875 | .3040 | .1738 | .1562 |       | .4277 |       | .1819  | -.1252 | -.3062 | -.4410 | -.4908 |       |
| 140.000 |        |        |       |       |       |       |       |       |       | .1058  |        |        |        |        |       |
| 150.000 |        |        | .3439 | .2139 | .1359 | .1283 |       | .8732 |       | -.0761 | -.4763 | -.4358 | -.2635 | -.1655 |       |
| 162.000 |        |        |       |       |       |       |       |       | .6533 |        |        |        |        |        |       |
| 165.000 |        |        |       |       |       |       |       |       | .6831 |        |        |        |        |        |       |
| 174.000 |        |        |       |       |       |       |       | .8465 |       | -.3364 | -.4393 | -.3677 | -.2217 | -.1033 |       |
| 180.000 | 1.3856 | .4760  | .2523 | .2246 | .1107 | .1170 | .6731 | .7938 |       | -.4128 | -.4427 | -.2977 | -.2113 | -.0744 |       |

Phi

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Phi     |        |        |        |        |        |        |        |        |        |        |
| .000    | .1782  | .1992  | .2208  | .1843  | .1235  | .0788  | -.0214 |        | -.0520 | -.0748 |
| 40.000  | .2243  |        | .2515  | .1973  | .1118  | .1038  | -.0242 |        | -.0934 | -.1219 |
| 70.000  | -.1835 | -.3406 | -.3738 | -.2863 | -.2070 | -.0556 | -.0917 |        |        |        |
| 90.000  | -.1544 | -.2605 | -.3120 | -.0945 | -.2080 | -.1960 | -.0833 |        |        |        |
| 105.000 |        |        | -.2705 | .0004  | -.2186 | -.2866 | -.1682 |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.2489 |        |        |
| 120.000 | -.1965 | -.2008 | -.0427 | .0580  | -.1372 | -.2280 | -.2295 | -.2582 |        |        |
| 135.000 |        |        | -.0448 | .1304  | -.1038 | -.1419 | -.1677 |        |        |        |
| 150.000 | -.1040 | -.1861 | -.1552 | .2202  | -.0501 | -.1456 | -.2148 |        |        |        |
| 165.000 | -.0898 |        | -.0550 |        | .2149  | .0220  | -.3094 |        |        |        |
| 180.000 | -.0656 | -.0647 | -.0672 | .3532  |        |        |        |        |        |        |

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8823)

ALPHA ( 5 ) = 11.869 BETA ( 2 ) = .183 MACH = 1.3942 Q = 599.92 P = 440.89 RN/L = 2.9149

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|--------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|
| PHI     | .000   | 1.3922 | 1.1523 | .6763 | .4939 | .3551 |       | .1863 | .1516  | .1385  | .1246 | .1541 | .1589 | .1543 |       |
| 20.000  |        |        | .6842  | .4873 | .3433 | .2420 |       | .1827 | .1516  | .1385  | .1246 | .1541 | .1589 | .1543 |       |
| 40.000  |        |        | .7002  | .4856 | .3696 | .2503 |       | .1986 | .1163  | .1290  | .1385 | .1613 | .1306 | .1512 |       |
| 55.000  |        |        | .6288  | .4047 | .3091 | .1458 |       | .1188 | .0619  |        |       |       |       |       |       |
| 70.000  |        |        | .5634  | .3411 | .2476 | .1510 |       | .1172 | .0712  | .1174  | .0702 | .0882 | .1687 |       |       |
| 90.000  |        | .6334  | .5214  | .3063 | .2113 | .1191 |       | .1167 | .1648  | .1446  | .0977 | .1295 | .1963 |       |       |
| 120.000 |        |        | .4302  | .2493 | .1480 | .1169 |       | .3973 | .1204  | .1795  | .3493 | .4327 | .2513 |       |       |
| 140.000 |        |        |        |       |       |       |       |       | .0239  |        |       |       |       |       |       |
| 150.000 |        |        | .3228  | .2336 | .1217 | .1266 |       | .7331 | .5866  | .4678  | .3982 | .2003 | .0924 |       |       |
| 162.000 |        |        |        |       |       |       |       |       | .6347  |        |       |       |       |       |       |
| 163.000 |        |        |        |       |       |       |       |       |        |        |       |       |       |       |       |
| 169.000 |        |        |        |       |       |       |       |       |        |        |       |       |       |       |       |
| 174.000 |        |        |        |       |       |       |       |       |        |        |       |       |       |       |       |
| 180.000 | 1.3922 | .4632  | .2631  | .2355 | .1183 | .1255 | .7359 | .8055 |        | .3167  | .4308 | .3199 | .1917 | .0561 |       |
| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |

PHI

|         |       |       |       |       |       |       |       |       |       |       |  |  |  |  |  |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|--|--|--|--|
| 40.000  | .1711 | .2031 | .2388 | .1937 | .1313 | .0812 | .0264 |       |       |       |  |  |  |  |  |
| 70.000  | .2054 | .2559 | .2137 | .2137 | .1219 | .0932 | .0247 |       | .0483 | .0714 |  |  |  |  |  |
| 90.000  | .2309 | .3604 | .2184 | .2184 | .2559 | .2245 | .1337 |       | .0369 | .1330 |  |  |  |  |  |
| 105.000 | .1440 | .2395 | .3020 | .1135 | .2587 | .2705 | .2031 |       |       |       |  |  |  |  |  |
| 110.000 |       | .2051 | .0002 | .3064 | .3955 | .3321 |       |       |       |       |  |  |  |  |  |
| 120.000 | .1038 | .1245 | .0176 | .0441 | .1380 | .2452 | .3126 | .3252 |       |       |  |  |  |  |  |
| 135.000 |       |       | .0350 | .0698 | .0926 | .1601 | .2111 | .3519 |       |       |  |  |  |  |  |
| 150.000 | .0708 | .0914 | .1104 | .3312 | .0294 | .1167 | .1650 |       |       |       |  |  |  |  |  |
| 165.000 | .0464 | .0595 |       | .2270 | .0287 | .3061 |       |       |       |       |  |  |  |  |  |
| 180.000 | .0385 | .0335 | .0367 | .3859 |       |       |       |       |       |       |  |  |  |  |  |

ALPHA ( 5 ) = 11.865 BETA ( 3 ) = 4.258 MACH = 1.3942 Q = 599.92 P = 440.89 RN/L = 2.9149

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230  | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     | .000  | 1.3827 | 1.1373 | .6652 | .4854 | .3540 |       | .1822 | .1513 | .1332 | .1186 | .1502 | .1462 | .1457 |       |
| 20.000  |       |        | .6406  | .4487 | .3144 | .2089 |       | .1580 | .1296 | .1332 | .1186 | .1502 | .1462 | .1457 |       |
| 40.000  |       |        | .5970  | .4114 | .3000 | .1880 |       | .1391 | .0539 | .0625 | .0738 | .1303 | .1016 | .1225 |       |
| 55.000  |       |        | .5054  | .2983 | .2115 | .0508 |       | .0451 | .0060 |       |       |       |       |       |       |
| 70.000  |       |        | .4481  | .2381 | .1610 | .0776 |       | .0567 | .0193 | .1616 | .1211 | .1482 | .2335 |       |       |
| 90.000  |       | .4887  | .4259  | .2136 | .1356 | .0475 |       | .0634 | .0985 | .1915 | .1475 | .1828 | .2443 |       |       |
| 120.000 |       |        | .3653  | .1987 | .1071 | .0844 |       | .3575 | .0403 | .2409 | .3825 | .3877 | .1500 |       |       |

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

DATE 10 FEB 76 TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8823)

ALPHA ( 5 ) = 11.865 BETA ( 3 ) = 4.258

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040  | .2510  | .3010 | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|
| PHI     |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 140.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 151.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 169.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 180.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| X/LB    | 1.3827 | .4357 | .2568 | .2544 | .1235 | .1140 | .6689 | .8192 | .9990 | 1.0180 | 1.0460 |       |       |       |       |

PHI

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040  | .2510  | .3010 | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|
| 140.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 151.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 169.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 180.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| X/LB    | 1.3827 | .4357 | .2568 | .2544 | .1235 | .1140 | .6689 | .8192 | .9990 | 1.0180 | 1.0460 |       |       |       |       |

ALPHA ( 6 ) = 15.857 BETA ( 1 ) = -3.835 MACH = 1.3942 Q = 599.51 P = 440.65 RN/L = 2.9096

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 20.000  |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000  |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 55.000  |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| X/LB    | 1.3153 | 1.2439 | .7957 | .5979 | .4629 | .3405 | .3807 | .3096 | .2190 | .2419 | .2097 | .1914 | .2125 | .2239 | .2350 |

.5826

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TABULATED PRESSURE DATA - 0A148 ( MES 11-073-1 )

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(XE8823)

AMES 11-073(0A148) -140-/B/C/R ORB FUSELAGE

ALPHA ( 6 ) = 15.857 BETA ( 1 ) = -3.836

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1680  | .1770  | .2040  | .2510  | .3010  | .3780  | .4870  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 180.000 | 1.3153 | .3133  | .1500  | .1383  | .0488  | .0614  |        | .7227  |        | -.4429 | -.4616 | -.3082 | -.1964 | -.0706 |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| .000    | .2760  | .2997  | .3252  | .2972  | .2376  | .1552  | .0234  |        | -.0082 | -.0262 |        |        |        |        |       |
| 40.000  | .3158  | .3693  | .3111  | .2147  | .1584  | .0244  |        |        | -.0654 | -.1151 |        |        |        |        |       |
| 70.000  | -.2550 | -.4438 | -.5232 | -.4619 | -.4452 | -.3828 | -.1753 |        |        |        |        |        |        |        |       |
| 90.000  | -.1425 | -.3111 | -.3766 | -.1968 | -.2672 | -.3033 | -.2479 |        |        |        |        |        |        |        |       |
| 105.000 |        |        | -.2964 | -.0368 | -.2807 | -.3590 | -.3626 |        |        |        |        |        |        |        |       |
| 110.000 |        |        |        |        |        |        |        | -.307F |        |        |        |        |        |        |       |
| 120.000 | -.2320 | -.2002 | -.1127 | .0902  | -.1954 | -.2797 | -.2822 | -.3356 |        |        |        |        |        |        |       |
| 135.000 |        |        | -.0403 | .0344  | -.2058 | -.1843 | -.2171 |        |        |        |        |        |        |        |       |
| 150.000 | -.2841 | -.3198 | -.2012 | .1521  | -.3756 | -.2802 | -.3380 |        |        |        |        |        |        |        |       |
| 165.000 | -.1184 |        | -.2127 |        | .1650  | -.0529 | -.3271 |        |        |        |        |        |        |        |       |
| 180.000 | -.0821 | -.1027 | -.1054 | .4021  |        |        |        |        |        |        |        |        |        |        |       |

ALPHA ( 6 ) = 15.871 BETA ( 2 ) = .184 MACH = 1.3942 Q = 599.51 P = 440.65 RN/L = 2.9096

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1680 | .1770  | .2040  | .2510  | .3010  | .3780  | .4870  | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| .000    | 1.3225 | 1.2497 | .8000 | .6027 | .4691 |       |       | .2670 |        | .2445  | .2166  | .1921  | .2175  | .2299  | .2334 |
| 20.000  |        |        | .8021 | .5941 | .4420 | .3241 |       | .2585 |        | .2252  | .1926  | .1765  | .2049  | .2049  | .2270 |
| 40.000  |        |        | .7628 | .5632 | .4366 | .3120 |       | .2415 |        | .1952  | .1626  | .1463  | .1765  | .2049  | .2270 |
| 55.000  |        |        | .6274 | .4124 | .3065 | .1210 |       | .0502 |        | .0463  | .0535  | .0535  | .0809  | .0850  | .1956 |
| 70.000  |        |        | .5269 | .3277 | .2280 | .1399 |       | .0983 |        | .0535  | .1127  | .0821  | .0821  | .1180  | .1972 |
| 90.000  |        | .5651  | .4692 | .2728 | .1820 | .0883 |       | .0923 |        | .1447  | .1394  | .1130  | .1130  | .1180  | .1972 |
| 120.000 |        |        | .3477 | .1720 | .0581 | .0559 |       | .3148 |        | .1130  | .1179  | .1130  | .1130  | .1180  | .1972 |
| 140.000 |        |        |       |       |       |       |       |       |        | .0313  |        |        |        |        |       |
| 150.000 |        |        | .2250 | .1312 | .0567 | .0656 |       | .6315 |        | -.1642 | -.4968 | -.4499 | -.2431 | -.1058 |       |
| 151.000 |        |        |       |       |       |       |       |       | .5494  |        |        |        |        |        |       |
| 162.000 |        |        |       |       |       |       |       |       | .6064  |        |        |        |        |        |       |
| 165.000 |        |        |       |       |       |       |       |       |        | -.3500 | -.4541 | -.3376 | -.1875 | -.0685 |       |
| 169.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 174.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 180.000 | 1.3225 | .2847  | .1605 | .1585 | .0636 | .0642 | .6396 | .7345 |        |        |        |        |        |        |       |
| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| .000    | .2661  | .3018  | .3549 | .3092 | .2412 | .1581 | .0201 |       | -.0004 | -.0275 |        |        |        |        |       |
| 40.000  | .2928  | .3898  | .3188 | .3188 | .2203 | .1586 | .0241 |       | -.0569 | -.0974 |        |        |        |        |       |

ALPHA ( 6 ) = 15.871      BETA ( 2 ) = .184

ANES 11-073(OA148) -140A/B/C/R ORB FUSELAGE (XE9823)

## SECTION (1) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7250  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0190 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| 72.000  | -.3441 | -.4896 | -.5471 | -.4667 | -.5038 | -.4429 | -.2220 |        |        |        |
| 90.000  | -.2107 | -.3306 | -.4049 | -.2578 | -.3744 | -.3641 | -.3022 |        |        |        |
| 105.000 |        |        | -.2909 | -.0818 | -.4070 | -.4449 | -.4122 |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.3951 |        |        |
| 120.000 | -.1230 | -.1656 | -.0910 | -.0102 | -.1955 | -.2542 | -.3278 | -.3763 |        |        |
| 135.000 |        |        | .0065  | -.0015 | -.1167 | -.1830 | -.2351 |        |        |        |
| 150.000 | -.1539 | -.1752 | -.1909 | .2530  | -.2824 | -.2394 | -.2657 |        |        |        |
| 165.000 | -.0785 |        | -.1107 |        | .2435  | -.0760 | -.3415 |        |        |        |
| 180.000 | -.0796 | -.0588 | -.0782 | .4676  |        |        |        |        |        |        |

## SECTION - ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |       |       |       |       |       |        |        |        |        |        |        |        |       |
| 20.000  | 1.3173 | 1.2392 | .7897 | .5995 | .4552 |       |       | .2698  |        | .2380  | .2103  | .1910  | .2182  | .2258  | .2317 |
| 40.000  |        |        | .7532 | .5522 | .4078 | .2985 |       | .2319  |        | .1988  |        |        |        |        |       |
| 55.000  |        |        | .6564 | .4819 | .3605 | .2422 |       | .1620  |        | .0862  | .0716  | .1217  | .1692  | .1744  | .2044 |
| 70.000  |        |        | .4949 | .3020 | .1982 | .0231 |       | -.0053 |        | -.0408 |        |        |        |        |       |
| 90.000  | .4344  |        | .4089 | .2253 | .1393 | .0658 |       | .0267  |        | -.0082 | -.1424 | -.1286 | -.1545 | -.2891 |       |
| 120.000 |        |        | .3950 | .1854 | .1091 | .0269 |       | .0395  |        | .1003  | -.1723 | -.1336 | -.1738 | -.2477 |       |
| 140.000 |        |        | .3049 | .1284 | .0422 | .0364 |       | .2969  |        | .0587  | -.2268 | -.3682 | -.4887 | -.2074 |       |
| 150.000 |        |        | .2060 | .1327 | .0524 | .0504 |       | .5974  |        | -.2822 | -.4917 | -.3858 | -.1833 | -.0730 |       |
| 162.000 |        |        |       |       |       |       |       |        | .4651  |        |        |        |        |        |       |
| 165.000 |        |        |       |       |       |       |       |        | .5334  |        |        |        |        |        |       |
| 169.000 |        |        |       |       |       |       |       |        |        | -.3509 | -.4587 | -.2898 | -.1762 | -.0488 |       |
| 174.000 |        |        |       |       |       |       |       | .7045  |        |        |        |        |        |        |       |
| 180.000 | 1.3173 | .2691  | .1575 | .1607 | .0749 | .0554 | .5917 |        |        |        |        |        |        |        |       |
| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790 | .9210 | .9600 | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-07310A148) -140A/B/C/R ORB FUSELAGE

(XE8823)

ALPHA ( 6 ) = 15.861 BETA ( 3 ) = 4.289

SECTION ( 1 ) ORB: TER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB | .6520 | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|

PHI

165.000

-.0564

-.0880

-.0767

-.1065

-.1058

.4237

.2794

-.0765

-.3436

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## TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB24) ( 05 AUG 75 )

## REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO  
 LREF = 474.8000 IN. YMRP = .0000 IN. YO  
 BREF = 936.0680 IN. ZMRP = 375.0000 IN. ZO  
 SCALE = .0300

## PARAMETRIC DATA

RUDDER = .000 SPOBRK = .000  
 EDFLAP = .000 L-ELVN = .000  
 R-ELVN = .000 MACH = 1.250

ALPHA ( 1 ) = -3.982 BETA ( 1 ) = -3.844 MACH = 1.2469 Q = 598.78 P = 551.11 RN/L = 3.0086

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.4009 .6271 .1851 .0654 .0004 .0639 .0639 .0130  
 20.000 .2212 .0702 .0195 .0639 .0639 .0445  
 40.000 .4060 .1116 .0344 .0539 .0539 .0445  
 55.000 .5550 .2984 .2177 .1208 .0829  
 70.000 .6944 .4006 .3172 .2669 .1890  
 90.000 .9163 .7341 .4862 .3661 .2394  
 120.000 .8012 .6104 .4817 .5254 .4939  
 140.000 .7905 .6441 .5358 .6047 .9220  
 151.000 .6497  
 162.000 .7075  
 165.000 .9767  
 169.000 .9069  
 174.000 1.0454  
 180.000 1.0454 .5237 .6047 1.0454 .9990 1.0180 1.0460

X/LB

PHI

.000 .0022 -.0215 -.0561 -.1213 -.1979 -.2499 -.3174  
 40.000 .0705 -.0705 -.0895 -.1247 -.2101 -.1933 -.3716  
 70.000 .0815 .0000 .0109 .3123 .1459 .0537 .0275  
 90.000 .0971 .0448 .1803 .2732 .1237 .0178 .0074  
 105.000 .110.000 .3032 .2649 .0449 -.0422 -.0731  
 120.000 .0635 .0708 .4231 .2913 .0101 -.0361 -.0537  
 135.000 .35.000 .4794 .4860 .0615 .0632 .0296  
 150.000 .0367 .1035 .4667 .4694 .1521 .1492 .0543  
 165.000 .0202 .4564 .4320 .2346 -.3032  
 180.000 .0082 .1204 .4512 .5413

-.2197  
 -.2094

-.3255  
 -.3388  
 -.3236  
 -.2746

-.3733  
 -.3751  
 -.1805  
 -.1648  
 -.0961

-.2658  
 -.2955  
 -.2284  
 -.1411  
 -.0855

-.1971  
 -.3939  
 -.2320  
 -.1249  
 -.0733

-.0107  
 -.0177  
 -.0588  
 -.0698  
 -.0988  
 -.0637

-.2018  
 -.2004  
 -.1525  
 -.0912  
 -.1275  
 -.0800

.0210  
 .0743  
 -.2776  
 -.1294  
 -.0779  
 .0190

.0119  
 -.2453  
 -.2398  
 -.0926  
 .0104

.0743  
 -.1799  
 -.4205  
 -.1309  
 -.0271

.0432  
 -.1971  
 -.3939  
 -.2320  
 -.1249  
 -.0733

-.0697  
 -.0697  
 -.0588  
 -.0698  
 -.0988  
 -.0637

-.2018  
 -.2004  
 -.1525  
 -.0912  
 -.1275  
 -.0800

.0210  
 .0743  
 -.2776  
 -.1294  
 -.0779  
 .0190

.0119  
 -.2453  
 -.2398  
 -.0926  
 .0104

.0743  
 -.1799  
 -.4205  
 -.1309  
 -.0271

.0432  
 -.1971  
 -.3939  
 -.2320  
 -.1249  
 -.0733

-.0697  
 -.0697  
 -.0588  
 -.0698  
 -.0988  
 -.0637

-.2018  
 -.2004  
 -.1525  
 -.0912  
 -.1275  
 -.0800

.0210  
 .0743  
 -.2776  
 -.1294  
 -.0779  
 .0190

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R OR3 FUSELAGE

(XE8824)

ALPHA ( 1 ) = -3.977 BETA ( 2 ) = .190 MACH = 1.2469 Q = 599.78 P = 551.11 RN/L = 3.0086

SECTION : 1109B1TER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

|         |        |       |       |       |        |        |        |        |        |        |        |        |        |
|---------|--------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| .000    | 1.4044 | .6276 | .1983 | .0565 | .0225  |        | -.0089 | -.0003 | -.0053 | -.0570 | -.0723 | -.0908 | -.0582 |
| 20.000  |        |       | .2143 | .0843 | -.0014 | -.0294 | -.0233 | -.0336 |        |        |        |        |        |
| 40.000  |        |       | .3550 | .0847 | .0289  | -.0301 | -.0583 | -.1428 | -.1381 | -.1211 | -.0844 | -.0927 | -.0595 |
| 55.000  |        |       | .4745 | .2155 | .1556  | .0668  | .0576  | .0198  |        |        |        |        |        |
| 70.000  |        |       | .5566 | .2964 | .2293  | .1755  | .1316  | .0140  | -.3359 | -.2031 | -.1175 | .0009  |        |
| 90.000  |        | .7789 | .6214 | .3668 | .2694  | .2266  | .1637  | -.0851 | -.3190 | -.3154 | -.1235 | -.0071 |        |
| 120.000 |        |       | .7085 | .5145 | .3820  | .4441  | .3914  | -.0401 | -.2713 | -.4909 | -.1893 | -.0396 |        |
| 140.000 |        |       |       |       |        |        |        | -.1633 |        |        |        |        |        |
| 150.000 |        | .7417 | .6103 | .4951 | .5671  |        | .8517  | -.2803 | -.3647 | -.2462 | -.1623 | -.0591 |        |
| 151.000 |        |       |       |       |        |        |        | .5638  |        |        |        |        |        |
| 152.000 |        |       |       |       |        |        |        | .6418  |        |        |        |        |        |
| 165.000 |        |       |       |       |        |        |        |        | -.2706 | -.3459 | -.1690 | -.1671 | -.0605 |
| 169.000 |        |       |       |       |        |        |        |        |        |        |        |        |        |
| 174.000 |        |       |       |       |        |        |        |        |        |        |        |        |        |
| 180.000 | 1.4044 | .9981 | .7424 | .6200 | .5378  | .6118  | 1.0404 |        | -.3421 | -.4084 | -.1479 | -.1652 | -.0676 |

X/LB

PHI

|         |        |        |        |        |        |        |        |        |        |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|--|--|--|
| .000    | .0022  | -.0241 | -.0482 | -.1200 | -.1976 | -.2512 | -.3177 | -.3302 | -.3352 |  |  |  |  |
| 40.000  | -.0376 |        | -.0690 | -.1157 | -.2000 | -.2015 | -.3523 | -.3254 | -.2646 |  |  |  |  |
| 70.000  | .0707  | -.0119 | .1173  | .2931  | .1017  | .0023  | -.0273 |        |        |  |  |  |  |
| 90.000  | .0776  | .0407  | .2213  | .2608  | .0509  | -.0309 | -.0416 |        |        |  |  |  |  |
| 105.000 |        |        | .3271  | .2326  | -.0236 | -.0863 | -.1131 |        |        |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        | -.2619 |        |  |  |  |  |
| 120.000 | .0683  | .1015  | .3609  | .1356  | -.0568 | -.1236 | -.1580 | -.2443 |        |  |  |  |  |
| 135.000 |        |        | .4508  | .4404  | .0102  | -.0260 | -.0585 |        |        |  |  |  |  |
| 150.000 | .0431  | .1272  | .4717  | .4701  | .1157  | .0433  | -.0330 |        |        |  |  |  |  |
| 165.000 | .0317  |        | .4734  |        | .3484  | .1154  | -.3291 |        |        |  |  |  |  |
| 180.000 | .0244  | .1353  | .4856  | .6150  |        |        |        |        |        |  |  |  |  |

ALPHA ( 1 ) = -3.980 BETA ( 3 ) = .4277 MACH = 1.2469 Q = 599.78 P = 551.11 RN/L = 3.0086

SECTION : 1109B1TER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

|         |        |       |       |       |        |        |        |        |        |        |        |        |        |
|---------|--------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| .000    | 1.3378 | .6215 | .1993 | .0463 | .0268  |        | -.0385 | -.0108 | -.0122 | -.0523 | -.0688 | -.0999 | -.0695 |
| 20.000  |        |       | .1986 | .0500 | -.0045 | -.0398 | -.0127 | -.0234 |        |        |        |        |        |
| 40.000  |        |       | .3006 | .0595 | .0130  | -.0337 | -.0257 | -.0897 | -.0957 | -.1075 | -.0778 | -.0873 | -.0397 |
| 55.000  |        |       | .3917 | .1398 | .0822  | .0213  | .0258  | -.0513 |        |        |        |        |        |
| 70.000  |        |       | .4559 | .1929 | .1296  | .0892  | .0743  | -.0475 | -.3862 | -.2472 | -.1393 | -.0204 |        |
| 90.000  |        | .6382 | .5173 | .2586 | .1820  | .1259  | .0857  | -.1840 | -.3917 | -.3715 | -.1272 | -.0187 |        |
| 120.000 |        |       | .6113 | .4243 | .2716  | .3400  | .2797  | -.1554 | -.3458 | -.5529 | -.2609 | -.0539 |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XE8824)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 1 ) = -3.980 BETA ( 3 ) = 4.277

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

| X/LB    | .6520 | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| PHI     |       |       |       |       |       |       |       |       |        |        |
| 40.000  |       |       |       |       |       |       |       |       |        |        |
| 70.000  |       |       |       |       |       |       |       |       |        |        |
| 90.000  |       |       |       |       |       |       |       |       |        |        |
| 105.000 |       |       |       |       |       |       |       |       |        |        |
| 110.000 |       |       |       |       |       |       |       |       |        |        |
| 120.000 |       |       |       |       |       |       |       |       |        |        |
| 135.000 |       |       |       |       |       |       |       |       |        |        |
| 150.000 |       |       |       |       |       |       |       |       |        |        |
| 165.000 |       |       |       |       |       |       |       |       |        |        |
| 180.000 |       |       |       |       |       |       |       |       |        |        |

PHI

40.000

70.000

90.000

105.000

110.000

120.000

135.000

150.000

165.000

180.000

ALPHA ( 2 ) = .038 BETA ( 1 ) = -3.875 MACH = 1.2468 Q = 599.96 P = 551.34 F<sub>1</sub>/L = 3.0225

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 20.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 55.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

1.0037

(42883X)

|       | ALPHA ( 2 ) = | .038 | BETA ( 1 ) = | -3.875 |
|-------|---------------|------|--------------|--------|
| ----- |               |      |              |        |

AMCS 11-073(OA148) -140A/B/C/R ORB FUSELAGE

## SECTION 11 ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

[illegible]

ALPHA ( 2 ) = .042    BETA ( 2 ) = .180    MACH = 1.2468    Q = 599.96    P = 551.34    RN/L = 3.0225

## SECTION 1: CRBITER FUSELAGE

## DEPENDENT VARIABLE CP

[illegible]

-.2570      -.2696  
-.2750      -.2309

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XE8824)

ALPHA ( 2 ) = .042 BETA ( 2 ) = .180

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |       |        |        |        |        |        |        |
| 70.000  | -.0028 | -.1125 | -.1200 | .1687 | .0232  | -.0692 | -.0729 |        |        |        |
| 90.000  | .0246  | -.0446 | .0785  | .1265 | -.0211 | -.0883 | -.1166 |        |        |        |
| 105.000 |        |        | .2046  | .1207 | -.0929 | -.1582 | -.1882 |        |        |        |
| 110.000 |        |        |        |       |        |        |        | -.2927 |        |        |
| 120.000 | .0363  | .0312  | .2947  | .1769 | -.0803 | -.1821 | -.2220 | -.2794 |        |        |
| 135.000 |        |        | .3263  | .3782 | .0056  | -.0893 | -.1241 |        |        |        |
| 150.000 | .0284  | .0776  | .3452  | .3882 | .0651  | -.0175 | -.0961 |        |        |        |
| 165.000 | .0242  |        | .3635  | .2917 | .0597  | -.3029 |        |        |        |        |
| 180.000 | .0163  | .0313  | .3775  | .5120 |        |        |        |        |        |        |

ALPHA ( 2 ) = .044

BETA ( 3 ) =

4.251

MACH = 1.2468

Q

= 599.96

P

= 551.34

RN/L

= 3.0225

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0084 | .0230 | .0460 | .0700 | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|-------|-------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |       |       |       |        |       |        |        |        |        |        |        |        |        |
| .000    |        |       |       |       |       |        |       | -.0009 |        | .0198  | .0189  | .0018  | -.0294 | -.0828 |        |
| 20.000  | 1.4050 | .7493 | .3032 | .1593 | .1116 | -.0028 |       | .0102  |        | .0129  | -.0119 | -.0457 | -.0363 | -.0799 | -.0366 |
| 40.000  |        |       | .2984 | .1440 | .0784 | .0130  |       | .0507  |        | .0166  | .0112  | -.2242 | -.1756 | -.0500 |        |
| 55.000  |        |       | .3790 | .1564 | .1000 | .0516  |       | .0927  |        | .0186  | -.1046 | -.3615 | -.3282 | -.1709 | -.0438 |
| 70.000  |        |       | .4361 | .1969 | .1443 | .0873  |       | .1166  |        | .0112  | -.1287 | -.3572 | -.1730 | -.0510 |        |
| 90.000  |        | .6089 | .4709 | .2187 | .1422 | .0873  |       | .1379  |        | .0112  | -.3107 | -.5320 | -.1730 | -.0510 |        |
| 120.000 |        |       | .5091 | .2578 | .1410 | .1175  |       | .3137  |        | -.3770 | -.4370 | -.2709 | -.2268 | -.0635 |        |
| 140.000 |        |       | .5603 | .3713 | .2173 | .3161  |       | .7477  |        | .4499  |        |        |        |        |        |
| 150.000 |        |       | .5887 | .4708 | .3286 | .4328  |       |        |        | .5413  |        |        |        |        |        |
| 162.000 |        |       |       |       |       |        |       |        |        |        | -.3345 | -.4747 | -.2263 | -.2239 | -.0680 |
| 165.000 |        |       |       |       |       |        |       | .8715  |        |        |        |        |        |        |        |
| 169.000 |        |       |       |       | .3965 | .5033  | .9389 | .8909  |        |        |        |        |        |        |        |
| 174.000 |        |       |       |       |       |        |       |        |        |        | -.4382 | -.4155 | -.2401 | -.2026 | -.0784 |
| 180.000 | 1.4050 | .6473 | .6213 | .5054 | .3965 | .5033  |       |        |        |        |        |        |        |        |        |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210  | .9600 | .9990  | 1.0180 | 1.0460 |        |        |        |        |        |

PHI

300

40.000

70.000

90.000

105.000

110.000

120.000

135.000

150.000

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-07310A148) -140A 3/C/R ORB FUSELAGE

(XE8824)

ALPHA ( 2 ) = .044 BETA ( 3 ) = 4.251

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 .0043 .3486  
180.000 -.0038 .0984 .3563 .4105 .2120 -.0107 -.3407

ALPHA ( 3 ) = 3.904 BETA ( 1 ) = -3.872 MACH = 1.2475 Q = 600.37 P = 551.11 RM/L = 3.0117

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.4017 .8864 .4191 .2750 .1591 .0803 .0553  
20.000 .4589 .2872 .1598 .0803 .0587 .0317 .0679 .0381 .0300 -.0126 -.0164  
40.000 .6059 .3440 .2211 .1331 .1135 .0369 .0317 .0144 .0485 -.0171 .0019  
60.000 .6781 .4346 .3255 .2217 .2195 .1518 .1694 -.2219 -.0784 -.0727 -.1052  
80.000 .6907 .4460 .3276 .2524 .2462 .1694 .1237 -.2159 -.1308 -.1284 -.1025  
100.000 .6938 .4607 .3241 .2878 .2963 .1237 -.0987 -.1971 -.4048 -.2726 -.1728  
120.000 .6541 .4687 .3208 .3760 .5061 .0257 .0257 -.5085 -.3877 -.1923 -.1008  
140.000 .5576 .4358 .2706 .4119 .8790 .6134  
160.000 .6474 .9094  
180.000 .9524 .8291 .9990 1.0180 1.0460

4-B

1.4017

.7455

.4363

.4055

.2708

.4107

.9524

.8291

.9990

1.0180

1.0460

.2678

-.2771

.1865

-.1321

.0445

-.0852

-.2973

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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ALPHA ( 3 ) = 3.905 BETA ( 2 ) = .182 MACH = 1.2475 Q = 600.37 P = 551.11 RN/L = 3.0117  
 (XE8824)

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     | .000   | .8804 | .4182 | .2773 | .1771 |       |       | .0508  | .0709  | .0750  | .0750  | .0476  | .0253  | -.0078 | -.0155 |
| 20.000  | .4337  | .2718 | .1582 | .0732 |       |       | .0610 | .0555  | .0555  | .0393  | .0393  | .0120  | .0255  | -.0235 | -.0115 |
| 40.000  | .5234  | .2993 | .2027 | .1093 |       |       | .1736 | .1036  | .1036  |        |        |        |        |        |        |
| 55.000  | .5704  | .3407 | .2467 | .1434 |       |       | .1956 | .1114  | .1114  | -.2647 | -.2647 | -.1516 | -.1341 | -.1049 |        |
| 70.000  | .5744  | .3386 | .2361 | .1620 |       |       | .2331 | .0409  | .0409  | -.2761 | -.2761 | -.2096 | -.1885 | -.1028 |        |
| 90.000  | .5866  | .3545 | .2235 | .1823 |       |       | .4345 | .0012  | .0012  | -.2704 | -.2704 | -.4646 | -.2146 | -.1099 |        |
| 120.000 | .5794  | .3990 | .2394 | .3103 |       |       |       | -.0871 | -.0871 | -.5113 | -.5113 | -.3706 | -.1866 | -.0578 |        |
| 140.000 | .5370  | .4222 | .2536 | .3960 |       |       |       | .5346  | .5346  |        |        |        |        |        |        |
| 151.000 |        |       |       |       |       |       |       | .5938  | .5938  |        |        |        |        |        |        |
| 162.000 |        |       |       |       |       |       |       |        |        | -.3683 | -.4392 | -.2934 | -.2120 | -.0486 |        |
| 165.000 |        |       |       |       |       |       |       | .8767  |        |        |        |        |        |        |        |
| 169.000 |        |       |       |       |       | .9350 |       | .8613  |        | -.5109 | -.5152 | -.2645 | -.2278 | -.0465 |        |
| 174.000 |        |       |       |       |       |       |       |        |        |        |        |        |        |        |        |
| 180.000 | 1.4033 | .7364 | .5027 | .4044 | .2856 | .4239 | .9350 | .8613  |        |        |        |        |        |        |        |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990  | .0180  | 1.0460 |        |        |        |        |        |

## PHI

|         |        |        |        |       |        |        |        |        |        |        |  |  |  |  |  |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--|--|--|--|--|
| 40.000  | .0324  | .0822  | .0966  | .0329 | -.0392 | -.1039 | -.2039 |        | -.2029 | -.2143 |  |  |  |  |  |
| 70.000  | .0600  | .0978  | .0978  | .0497 | -.0550 | -.0636 | -.1902 |        | -.2152 | -.1974 |  |  |  |  |  |
| 90.000  | -.0727 | -.1866 | -.2412 | .0068 | -.0603 | -.1401 | -.1112 |        |        |        |  |  |  |  |  |
| 105.000 | -.0271 | -.1293 | -.0595 | .0336 | -.1008 | -.1506 | -.1942 |        |        |        |  |  |  |  |  |
| 110.000 |        |        | .1215  | .0648 | -.2041 | -.2156 | -.2475 |        |        |        |  |  |  |  |  |
| 120.000 | -.0143 | -.0349 | .2172  | .0964 | -.1128 | -.2587 | -.2578 | -.3568 |        |        |  |  |  |  |  |
| 135.000 |        |        | .2309  | .2914 | -.0428 | -.1499 | -.1975 | -.3158 |        |        |  |  |  |  |  |
| 150.000 | .0100  | .0305  | .2406  | .4058 | .0253  | -.0690 | -.1555 |        |        |        |  |  |  |  |  |
| 165.000 | .0118  | .2558  | .2558  | .2558 | .2287  | .0061  | -.3182 |        |        |        |  |  |  |  |  |
| 180.000 | .0066  | .0348  | .2779  | .4642 |        |        |        |        |        |        |  |  |  |  |  |

ALPHA ( 3 ) = 3.915 BETA ( 3 ) = .4245 MACH = 1.2475 Q = 600.37 P = 551.11 RN/L = 3.0117

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | .8792 | .4159 | .2860 | .1859 |       |       | .0384  | .0475  | .0606  | .0565  | .0273  | -.0128 | -.0179 |       |
| 20.000  | .4052 | .2611 | .1487 | .0529 |       |       | .0391 | .0413  | .0413  | .0416  | .0116  | .0083  | -.0413 | -.0302 |       |
| 40.000  | .4529 | .2602 | .1719 | .0690 |       |       | .0693 | .0666  | .0666  |        |        |        |        |        |       |
| 55.000  | .4681 | .2519 | .1814 | .0667 |       |       | .1185 | .0592  | .0592  | -.3076 | -.3076 | -.2026 | -.1860 | -.1125 |       |
| 70.000  | .4698 | .2407 | .1589 | .0812 |       |       | .1374 | .0592  | .0592  | -.3322 | -.3322 | -.2645 | -.2223 | -.0923 |       |
| 90.000  | .4874 | .2573 | .1482 | .0823 |       |       | .1731 | -.0367 | -.0367 | -.3489 | -.3489 | -.5136 | -.1713 | -.0656 |       |
| 120.000 | .5007 | .3271 | .1650 | .2258 |       |       | .3414 | -.0959 | -.0959 |        |        |        |        |        |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8824)

ALPHA ( 3 ) = 3.915 BETA ( 3 ) = 4.245

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

X/LB

PHI

| PHI     | .000 | .0786 | .0876 | .0387 | -.0367 | -.0995 | -.1958 |
|---------|------|-------|-------|-------|--------|--------|--------|
| 40.000  |      |       |       |       |        |        |        |
| 70.000  |      |       |       |       |        |        |        |
| 90.000  |      |       |       |       |        |        |        |
| 104.000 |      |       |       |       |        |        |        |
| 110.000 |      |       |       |       |        |        |        |
| 120.000 |      |       |       |       |        |        |        |
| 135.000 |      |       |       |       |        |        |        |
| 150.000 |      |       |       |       |        |        |        |
| 155.000 |      |       |       |       |        |        |        |
| 180.000 |      |       |       |       |        |        |        |

ALPHA ( 4 ) = 7.877 BETA ( 1 ) = -3.667 MACH = 1.2474 Q = 600.25 P = 551.11 RN/L = 3.0132

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0050 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 20.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 55.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 104.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 135.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 155.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

.8920

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (XE8824)

ALPHA ( 4 ) = 7.877 BETA ( 1 ) = -3.867

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 180.000 | 1.3672 | .6055  | .3671  | .3188  | .1728  | .2345  |        | .7913  |        | -.5110 | -.5093 | -.3209 | -.2228 | -.0616 |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 40.000  | .1090  | .1393  | .1711  | .1237  | .0435  | -.0304 | -.1413 |        | -.1623 | -.1778 |        |        |        |        |       |
| 70.000  | .1357  | .1744  | .1290  | .0243  | .0068  | -.1422 |        |        | -.1599 | -.1626 |        |        |        |        |       |
| 70.000  | -.1365 | -.2574 | -.3192 | -.1472 | -.0882 | -.1324 | -.0321 |        |        |        |        |        |        |        |       |
| 90.000  | -.0928 | -.1964 | -.2770 | -.0253 | -.1657 | -.1746 | -.1356 |        |        |        |        |        |        |        |       |
| 105.000 |        | -.0674 |        | .0380  | -.2184 | -.2990 | -.2281 |        |        |        |        |        |        |        |       |
| 110.000 |        |        |        |        |        |        |        | -.2615 |        |        |        |        |        |        |       |
| 120.000 | -.1734 | -.1643 | .1126  | .0755  | -.1163 | -.2502 | -.2831 | -.2522 |        |        |        |        |        |        |       |
| 135.000 |        | .0957  | .1703  | .1703  | -.0875 | -.1521 | -.1783 |        |        |        |        |        |        |        |       |
| 150.000 | -.0716 | -.0191 | .0897  | .2099  | .0155  | -.0453 | -.1505 |        |        |        |        |        |        |        |       |
| 165.000 | -.0395 | .1179  |        | .2480  | .0731  | -.3349 |        |        |        |        |        |        |        |        |       |
| 180.000 | -.0371 | -.0004 | .1850  | .4287  |        |        |        |        |        |        |        |        |        |        |       |

ALPHA ( 4 ) = 7.882 BETA ( 2 ) = .178 MACH = 1.2474 Q = 600.25 P = 551.11 RM/L = 3.0132

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120  | .1580  | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|-------|-------|-------|--------|--------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |       |       |       |        |        |       |        |        |        |        |        |        |       |
| 20.000  | 1.3714 | 1.0060 | .5416 | .3896 | .2715 |        |        | .1125 |        | .1081  | .1065  | .0918  | .0753  | .0548  |       |
| 40.000  |        | .5592  | .3774 | .3774 | .2434 | .1468  |        | .1172 |        | .0936  |        |        |        |        |       |
| 50.000  |        | .6171  | .3785 | .3785 | .2772 | .1903  |        | .1486 |        | .1059  | .1181  | .0750  | .0659  | .0392  | .0534 |
| 50.000  |        | .6042  | .3074 | .3074 | .2772 | .1569  |        | .1333 |        | .1333  |        |        |        |        |       |
| 70.000  |        | .5690  | .3406 | .3406 | .2415 | .1578  |        | .1923 |        | .1450  | -.2189 | -.1317 | -.1251 | -.1987 |       |
| 90.000  | .6737  | .5528  | .3419 | .3419 | .2225 | .1522  |        | .2419 |        | .0986  | -.2473 | -.1689 | -.1831 | -.1745 |       |
| 120.000 |        | .5030  | .3364 | .3364 | .1941 | .1940  |        | .4408 |        | .0290  | -.2666 | -.4490 | -.3680 | -.1690 |       |
| 140.000 |        |        |       |       |       |        |        |       |        | -.0720 |        |        |        |        |       |
| 150.000 |        | .4307  | .3364 | .3364 | .1551 | .2183  |        | .7665 |        | -.3266 | -.5538 | -.4225 | -.1926 | -.0675 |       |
| 150.000 |        |        |       |       |       |        |        | .5275 |        |        |        |        |        |        |       |
| 162.000 |        |        |       |       |       |        |        | .5721 |        |        |        |        |        |        |       |
| 165.000 |        |        |       |       |       |        |        |       | -.4095 | -.4812 | -.3309 | -.2054 | -.0477 |        |       |
| 169.000 |        |        |       |       |       |        |        |       |        |        |        |        |        |        |       |
| 174.000 |        |        |       |       |       |        |        |       |        |        |        |        |        |        |       |
| 180.000 | 1.3714 | .5916  | .3869 | .3187 | .1825 | .2433  | .8653  | .8197 | -.5450 | -.5504 | -.2977 | -.2191 | -.0425 |        |       |
| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790 | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |        |       |       |       |        |        |       |        |        |        |        |        |        |       |
| 40.000  | .0942  | .1455  | .1925 | .1266 | .0521 | -.0218 | -.1413 |       | -.1603 | -.1776 |        |        |        |        |       |
| 40.000  | .1188  |        | .2047 | .1453 | .0305 | .0029  | -.1351 |       | -.1686 | -.1817 |        |        |        |        |       |

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TABULATED PRESSURE DATA - 0A148 ( ANES 11-073-1 )

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(XE8824)

ALPHA ( 4 ) = 7.882 BETA ( 2 ) = .178

ANES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| 70.000  | -.1360 | -.2510 | -.3159 | -.1003 | -.1152 | -.1874 | -.1222 |        |        |        |
| 90.000  | -.0763 | -.1924 | -.2625 | -.0110 | -.2270 | -.2001 | -.2282 |        |        |        |
| 105.000 |        |        | -.0303 | .0616  | -.2906 | -.3167 | -.2835 |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.3655 |        |        |
| 120.000 | -.0690 | -.0901 | .1132  | .0410  | -.1577 | -.2859 | -.3563 | -.3245 |        |        |
| 135.000 |        |        | .1195  | .2428  | -.0860 | -.1931 | -.2455 |        |        |        |
| 150.000 | -.0137 | -.0326 | .1619  | .4472  | -.0196 | -.1230 | -.1918 |        |        |        |
| 165.000 | -.0090 |        | .1971  |        | .1791  | -.0558 | -.3319 |        |        |        |
| 180.000 | -.0131 | -.0026 | .2324  | .4981  |        |        |        |        |        |        |

ALPHA ( 4 ) = 7.882 BETA ( 3 ) = 4.244 MACH = 1.2474

P = 551.11 RN/L = 3.0132

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| .000    | 1.3631 | .9979 | .5385 | .3823 | .2688 |       |       | .1043 |        | .0864  | .0855  | .1019  | .0909  | .0463  | .0391 |
| 20.000  |        |       | .5194 | .3503 | .2223 | .1235 |       | .0918 |        | .0688  |        | .0586  | .0569  | .0062  | .0254 |
| 40.000  |        |       | .5249 | .3344 | .2318 | .1222 |       | .0991 |        | .0566  |        | .0912  |        |        |       |
| 55.000  |        |       | .4891 | .2785 | .1981 | .0691 |       | .0809 |        | .0912  |        |        |        |        |       |
| 70.000  |        |       | .4612 | .2453 | .1612 | .0693 |       | .1348 |        | .0953  | -.2590 | -.1878 | -.1895 | -.2125 |       |
| 90.000  | .5277  |       | .4567 | .2448 | .1465 | .0665 |       | .1861 |        | .0230  | -.3012 | -.2317 | -.2388 | -.1581 |       |
| 120.000 |        |       | .4347 | .2714 | .1396 | .1329 |       | .3643 |        | -.0603 | -.3377 | -.4974 | -.2308 | -.0956 |       |
| 140.000 |        |       |       |       |       |       |       |       |        | -.1834 |        |        |        |        |       |
| 150.000 |        |       | .3951 | .3164 | .1142 | .1828 |       | .7032 |        | -.4181 | -.5644 | -.3733 | -.1952 | -.0532 |       |
| 151.000 |        |       |       |       |       |       |       |       | .4385  |        |        |        |        |        |       |
| 162.000 |        |       |       |       |       |       |       |       | .5014  |        |        |        |        |        |       |
| 165.000 |        |       |       |       |       |       |       |       |        | -.4253 | -.5398 | -.3114 | -.2294 | -.0499 |       |
| 169.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 174.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 180.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| .000    | .3631  | .5704 | .3885 | .3396 | .1704 | .2163 |       | .8039 |        | -.5350 | -.4901 | -.3197 | -.2365 | -.0564 |       |
| 40.000  | .5520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 |       |        |        |        |        |        |        |       |
| 70.000  |        |       |       |       |       |       |       | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |
| 90.000  |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 105.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 110.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 120.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 135.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 150.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |

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ORIGINAL PAGE IS POOR

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XE8824)

AMES 11-073(0A148) -14(A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 7.882 BETA ( 3 ) = 4.244

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|--------|-------|-------|-------|-------|--------|--------|-------|--------|--------|
| PHI     |        |       |       |       |       |        |        |       |        |        |
| 165.000 | -.0234 |       | .1822 |       |       |        |        |       |        |        |
| 180.000 | -.0395 | .0072 | .1572 | .4071 | .1225 | -.1327 | -.3620 |       |        |        |

ALPHA ( 5 ) = 11.916 BETA ( 1 ) = -3.850 MACH = 1.2463 Q = 600.28 P = 552.05 RN/L = 3.0180

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| .000    | 1.3148 | 1.1098 | .6647 | .4845 | .3544 | .2288 | .1876 | .1876 | .1876 | .1698 | .1450 | .1327 | .1666 | .1250 | .1309 |
| 20.000  |        |        | .7059 | .5042 | .3525 | .2039 | .2003 | .2003 | .2003 | .1552 | .1250 | .1250 | .1250 | .1250 | .1250 |
| 40.000  |        |        | .7762 | .5429 | .4113 | .3039 | .2436 | .2436 | .2436 | .1676 | .1250 | .1250 | .1250 | .1250 | .1250 |
| 55.000  |        |        | .7316 | .5085 | .3945 | .2523 | .1975 | .1975 | .1975 | .1757 | .1250 | .1250 | .1250 | .1250 | .1250 |
| 70.000  |        |        | .6585 | .4485 | .3141 | .2367 | .1904 | .1904 | .1904 | .1757 | .1250 | .1250 | .1250 | .1250 | .1250 |
| 90.000  |        | .7507  | .5987 | .4030 | .2741 | .2010 | .1415 | .1415 | .1415 | .1255 | .1250 | .1250 | .1250 | .1250 | .1250 |
| 120.000 |        |        | .4707 | .2928 | .1726 | .1108 | .0613 | .0613 | .0613 | .0379 | .0379 | .0379 | .0379 | .0379 | .0379 |
| 140.000 |        |        | .3328 | .2248 | .1093 | .1358 | .8392 | .8392 | .8392 | .5788 | .5788 | .5788 | .5788 | .5788 | .5788 |
| 150.000 |        |        |       |       |       |       |       |       |       | .5934 | .5934 | .5934 | .5934 | .5934 | .5934 |
| 162.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |

1.3148

.4602

.2458

.2264

.0937

.1245

.7877

.8442

.7558

-.5450

-.5371

-.3391

-.2082

-.0609

X/LB

1.3148

.7290

.7790

.8210

.8790

.9210

.9600

.9990

1.0180

1.0460

PHI

.1908

.2723

.2005

.2093

.1176

.0278

-.0980

-.1256

-.1404

-.1613

-.1437

-.1256

-.1404

-.1613

-.1437

-.1256

-.1404

-.1613

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

(XEB8824)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 5 ) = 11.928 BETA ( 2 ) = .186 MACH = 1.2463 Q = 600.28 P = 552.05 RN/L = 3.0160

SECTION ( 1 ) ORBITER FUSELAGE

| X/LB    | 0.000 | .0080  | .0230  | .0450 | .0700 | .1120 | .1580 | .1860 | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|--------|--------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|
| PHI     | .000  | 1.3217 | 1.1176 | .6688 | .4923 | .3655 | .2203 | .1921 | .1735  | .1339  | .1547 | .1625 | .1300 | .1397 |       |
| 20.000  |       |        |        | .6790 | .4880 | .3421 | .2203 | .1895 | .1563  | .1206  | .1312 | .1497 | .1106 | .1366 |       |
| 40.000  |       |        |        | .6919 | .4811 | .3591 | .2409 | .1978 | .1611  | .1211  | .1654 | .1239 | .1270 | .2201 |       |
| 55.000  |       |        |        | .6137 | .3992 | .2302 | .1560 | .1236 | .1358  | .1729  | .1471 | .1819 | .2549 | .2317 |       |
| 70.000  |       |        |        | .5427 | .3409 | .2300 | .1555 | .1246 | .1350  | .1729  | .1471 | .1819 | .2549 | .2317 |       |
| 90.000  |       | .6102  |        | .5015 | .3068 | .1988 | .1246 | .4226 | .0501  | .2628  | .4330 | .5527 | .2317 |       |       |
| 120.000 |       |        |        | .4108 | .2532 | .1350 | .1316 |       | .0600  | .5920  | .4764 | .2191 | .0942 |       |       |
| 140.000 |       |        |        | .3157 | .2521 | .0653 | .1300 | .7441 | .5182  |        |       |       |       |       |       |
| 150.000 |       |        |        |       |       |       |       |       | .5495  |        |       |       |       |       |       |
| 162.000 |       |        |        |       |       |       |       | .7809 |        | .4465  | .5175 | .3627 | .1966 | .0507 |       |
| 165.000 |       |        |        |       |       |       |       |       |        |        |       |       |       |       |       |
| 169.000 |       |        |        |       |       |       |       | .7809 |        |        |       |       |       |       |       |
| 174.000 |       | .4377  | .2635  | .2350 | .0983 | .1305 | .7837 | .7786 |        | .5723  | .5768 | .3215 | .1940 | .0408 |       |
| 180.000 | 1.32  | .6520  | .7790  | .8210 | .8730 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |

SECTION ( 1 ) ORBITER FUSELAGE

| X/LB    | 0.000 | .0080  | .0230  | .0450 | .0700 | .1120 | .1580 | .1860 | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|--------|--------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|
| PHI     | .000  | 1.3217 | 1.1176 | .6688 | .4923 | .3655 | .2203 | .1921 | .1735  | .1339  | .1547 | .1625 | .1300 | .1397 |       |
| 20.000  |       |        |        | .6790 | .4880 | .3421 | .2203 | .1895 | .1563  | .1206  | .1312 | .1497 | .1106 | .1366 |       |
| 40.000  |       |        |        | .6919 | .4811 | .3591 | .2409 | .1978 | .1611  | .1211  | .1654 | .1239 | .1270 | .2201 |       |
| 55.000  |       |        |        | .6137 | .3992 | .2302 | .1560 | .1236 | .1358  | .1729  | .1471 | .1819 | .2549 | .2317 |       |
| 70.000  |       |        |        | .5427 | .3409 | .2300 | .1555 | .1246 | .1350  | .1729  | .1471 | .1819 | .2549 | .2317 |       |
| 90.000  |       | .6102  |        | .5015 | .3068 | .1988 | .1246 | .4226 | .0501  | .2628  | .4330 | .5527 | .2317 |       |       |
| 105.000 |       |        |        | .4108 | .2532 | .1350 | .1316 |       | .0600  | .5920  | .4764 | .2191 | .0942 |       |       |
| 110.000 |       |        |        | .3157 | .2521 | .0653 | .1300 | .7441 | .5182  |        |       |       |       |       |       |
| 120.000 |       |        |        |       |       |       |       |       | .5495  |        |       |       |       |       |       |
| 135.000 |       |        |        |       |       |       |       | .7809 |        | .4465  | .5175 | .3627 | .1966 | .0507 |       |
| 150.000 |       |        |        |       |       |       |       |       |        |        |       |       |       |       |       |
| 165.000 |       |        |        |       |       |       |       | .7809 |        |        |       |       |       |       |       |
| 180.000 | 1.32  | .6520  | .7790  | .8210 | .8730 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |

ALPHA ( 5 ) = 11.922 BETA ( 3 ) = 4.256 MACH = 1.2463 Q = 600.28 P = 552.05 RN/L = 3.0160

SECTION ( 1 ) ORBITER FUSELAGE

| X/LB    | 0.000 | .0080  | .0230  | .0450 | .0700 | .1120 | .1580 | .1860  | .1770  | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|--------|--------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|
| PHI     | .000  | 1.3217 | 1.1176 | .6688 | .4923 | .3655 | .2203 | .1921  | .1735  | .1339 | .1547 | .1625 | .1300 | .1397 |       |
| 20.000  |       |        |        | .6790 | .4880 | .3421 | .2203 | .1895  | .1563  | .1206 | .1312 | .1497 | .1106 | .1366 |       |
| 40.000  |       |        |        | .6919 | .4811 | .3591 | .2409 | .1978  | .1611  | .1211 | .1654 | .1239 | .1270 | .2201 |       |
| 55.000  |       |        |        | .6137 | .3992 | .2302 | .1560 | .1236  | .1358  | .1729 | .1471 | .1819 | .2549 | .2317 |       |
| 70.000  |       |        |        | .5427 | .3409 | .2300 | .1555 | .1246  | .1350  | .1729 | .1471 | .1819 | .2549 | .2317 |       |
| 90.000  |       | .4567  |        | .5015 | .3068 | .1988 | .1246 | .4226  | .0501  | .2628 | .4330 | .5527 | .2317 |       |       |
| 120.000 |       |        |        | .4108 | .2532 | .1350 | .1316 |        | .0600  | .5920 | .4764 | .2191 | .0942 |       |       |
|         |       |        |        | .3157 | .2521 | .0653 | .1300 | .7441  | .5182  |       |       |       |       |       |       |
|         |       |        |        |       |       |       |       |        | .5495  |       |       |       |       |       |       |
|         |       |        |        |       |       |       |       | .7809  |        | .4465 | .5175 | .3627 | .1966 | .0507 |       |
|         |       |        |        |       |       |       |       |        |        |       |       |       |       |       |       |
|         |       |        |        |       |       |       |       | .7809  |        |       |       |       |       |       |       |
|         |       | .4377  | .2635  | .2350 | .0983 | .1305 | .7837 | .7786  |        | .5723 | .5768 | .3215 | .1940 | .0408 |       |
|         | .6520 | .7790  | .8210  | .8730 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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$$\text{ALPHA} ( 5 ) = 11.922 \quad \text{BETA} ( 3 ) = 4.256$$

AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

(42883X)

## SECTION C ORBITER FUSELAGE

DEPENDENT VARIABLE CP

[illegible]

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## TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB25) ( 05 AUG 75 )

## REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO  
 LREF = 474.8000 IN. YMRP = .0000 IN. YO  
 BREF = 936.0380 IN. ZMRP = 375.0000 IN. ZO  
 SCALE = .0300

## PARAMETRIC DATA

RUDDER = .000 SPOBRK = .000  
 BDFLAP = .000 L-ELVN = .000  
 R-ELVN = .000 MACH = 1.100

ALPHA ( 1 ) = -3.988 BETA ( 1 ) = -3.842 MACH = 1.0978 Q = 600.10 P = 711.43 RN/L = 3.1881

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230 | .0460 | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|--------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | 1.3132 | .5491 | .1310 | .0742  | .0184  | .0227  | -.0227 | -.0809 | -.1476 | -.1335 | -.1046 | -.0196 |        |       |
| 40.000  |       |        | .1598 | .0516 | -.0395 | -.0525 | -.0712 | -.1071 | -.2471 | -.2392 | -.2014 | -.1603 | -.1494 | -.0472 |       |
| 70.000  |       |        | .3461 | .0831 | -.0143 | -.0708 | -.1616 | -.0600 | -.0155 | -.4020 | -.1733 | -.0881 | -.0073 |        |       |
| 90.000  |       |        | .5138 | .2702 | .1834  | .0892  | .0135  | -.0836 | -.0186 | -.3556 | -.3241 | -.0973 | -.0168 |        |       |
| 120.000 |       |        | .6256 | .3876 | .2987  | .2411  | .1167  | -.0302 | -.2963 | -.5174 | -.3295 | -.1700 | -.0429 |        |       |
| 140.000 |       |        | .7012 | .4718 | .3627  | .2915  | .1498  | .5426  | -.4460 | -.4218 | -.2857 | -.1967 | -.0347 |        |       |
| 150.000 |       |        | .7807 | .5043 | .4879  | .4903  | .8308  | .5980  | -.5662 | -.4485 | -.2332 | -.2294 | -.1358 |        |       |
| 162.000 |       |        | .7799 | .6418 | .5453  | .5769  | .8871  |        |        |        |        |        |        |        |       |
| 165.000 |       |        |       |       |        |        | .9762  |        |        |        |        |        |        |        |       |
| 169.000 |       |        |       |       |        |        | .8156  |        |        |        |        |        |        |        |       |
| 174.000 |       |        |       |       |        |        |        |        |        |        |        |        |        |        |       |
| 182.000 |       |        |       |       |        |        |        |        |        |        |        |        |        |        |       |

| X/LB    | .0678 | .0264  | .0717  | .1548  | .2374  | .2919  | .3740  |
|---------|-------|--------|--------|--------|--------|--------|--------|
| PHI     | .000  | -.0387 | -.0755 | -.1443 | -.2597 | -.2597 | -.4471 |
| 40.000  |       |        | .0626  | .3470  | .0731  | -.0195 | -.0413 |
| 70.000  |       |        | .1474  | .3637  | .0389  | -.0469 | -.0622 |
| 90.000  |       |        | .3735  | .5797  | -.0490 | -.1326 | -.0992 |
| 110.000 |       |        | .4731  | .4303  | -.1128 | -.1073 | -.1573 |
| 120.000 |       |        | .5292  | .5422  | -.0321 | .0088  | -.0745 |
| 135.000 |       |        | .5228  | .5261  | .0595  | .0753  | -.0559 |
| 150.000 |       |        | .5028  | .5907  | .1178  | .1178  | -.3510 |
| 165.000 |       |        | .2935  | .5977  |        |        |        |
| 182.000 |       |        | .4875  |        |        |        |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (XE8825)

ALPHA ( 1 ) = -3.982 BETA ( 2 ) = .191 MACH = 1.0978 Q = 600.10 P = 711.43 RN/L = 3.1881

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | 1.3169 | .5458 | .1310 | .0794 | .0139  |        |       | -.0187 | -.0535 | -.0900 | -.1498 | -.1262 | -.0932 | -.0258 |       |
| 20.000  |        |       | .1477 | .0636 | -.0194 | -.0467 |       | -.0433 | -.0892 | -.1811 | -.1964 | -.1470 | -.1134 | -.0031 |       |
| 40.000  |        |       | .2883 | .0740 | -.0196 | -.0432 |       | -.1110 | -.1114 |        |        |        |        |        |       |
| 55.000  |        |       | .4222 | .1928 | .1143  | .0504  |       | -.0275 | -.0902 | -.4736 | -.2475 | -.1176 | -.0276 |        |       |
| 70.000  |        |       | .5081 | .2768 | .1988  | .1623  |       | .0433  | -.2011 | -.4344 | -.4063 | -.1101 | -.0310 |        |       |
| 90.000  |        | .7375 | .5804 | .3474 | .2609  | .1956  |       | .0660  | -.1625 | -.3987 | -.6239 | -.1520 | -.0410 |        |       |
| 120.000 |        |       | .6778 | .5004 | .3771  | .4046  |       | .2856  | -.2324 |        |        |        |        |        |       |
| 140.000 |        |       |       |       |        |        |       |        | -.4263 | -.5170 | -.2850 | -.2141 | -.0206 |        |       |
| 150.000 |        |       | .7203 | .6042 | .4985  | .5321  |       | .7538  | .4502  |        |        |        |        |        |       |
| 162.000 |        |       |       |       |        |        |       |        | .5245  |        |        |        |        |        |       |
| 165.000 |        |       |       |       |        |        |       |        |        | -.4531 | -.4550 | -.2243 | -.2264 | -.0135 |       |
| 169.000 |        |       |       |       |        |        |       |        |        |        |        |        |        |        |       |
| 174.000 |        |       |       |       |        |        |       |        |        | -.4910 | -.5572 | -.2075 | -.2321 | -.0147 |       |
| 180.000 | 1.3169 | .9615 | .7262 | .6144 | .5393  | .5778  | .9820 | .8421  |        |        |        |        |        |        |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790  | .9210  | .9600 | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |

|         |       |        |        |        |        |        |        |        |        |        |  |  |  |  |  |
|---------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|--|--|--|--|
| PHI     | .0641 | -.0312 | -.0773 | -.1702 | -.2432 | -.3082 | -.3718 |        | -.3934 | -.3696 |  |  |  |  |  |
| 40.000  | .0019 |        | -.0823 | -.1544 | -.2530 | -.2739 | -.4318 |        | -.3045 | -.2686 |  |  |  |  |  |
| 70.000  | .1475 | .1072  | .2528  | .3099  | .0297  | -.0803 | -.1152 |        |        |        |  |  |  |  |  |
| 90.000  | .1565 | .1750  | .3009  | .3107  | -.0298 | -.1436 | -.1403 |        |        |        |  |  |  |  |  |
| 105.000 |       |        | .3614  | .2671  | -.1129 | -.1847 | -.2023 |        |        |        |  |  |  |  |  |
| 110.000 |       |        |        |        |        |        |        | -.4091 |        |        |  |  |  |  |  |
| 120.000 | .1737 | .2380  | .4096  | .2611  | -.1899 | -.2012 | -.2534 | -.3447 |        |        |  |  |  |  |  |
| 135.000 |       |        | .4908  | .5242  | -.0956 | -.1020 | -.1456 |        |        |        |  |  |  |  |  |
| 150.000 | .1908 | .3069  | .5050  | .5685  | .0071  | -.0446 | -.1341 |        |        |        |  |  |  |  |  |
| 165.000 | .1958 |        | .5023  |        | .2121  | .0133  | -.3414 |        |        |        |  |  |  |  |  |
| 180.000 | .1783 | .3161  | .5114  | .6592  |        |        |        |        |        |        |  |  |  |  |  |

ALPHA ( 1 ) = -3.987 BETA ( 3 ) = 4.273 MACH = 1.0978 Q = 600.10 P = 711.43 RN/L = 3.1881

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CR

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | 1.2999 | .5321 | .1302 | .0836 | .0164  |        |       | -.0187 | -.0418 | -.0908 | -.1473 | -.1332 | -.0993 | -.0336 |       |
| 20.000  |        |       | .1326 | .0615 | -.0162 | -.0556 |       | -.0182 | -.0665 | -.1371 | -.1657 | -.1900 | -.1405 | -.0915 | .0273 |
| 40.000  |        |       | .2348 | .0607 | .0020  | -.0215 |       | -.0626 | -.1404 |        |        |        |        |        |       |
| 55.000  |        |       | .3335 | .1245 | .0671  | .0222  |       | -.0392 | -.1404 |        |        |        |        |        |       |
| 70.000  |        |       | .4068 | .1793 | .1233  | .1005  |       | -.1495 | -.5250 | -.3041 | -.3041 | -.1168 | -.0172 |        |       |
| 90.000  |        | .5689 | .4068 | .2382 | .1648  | .1128  |       | .0007  | -.3025 | -.5043 | -.4652 | -.1228 | -.0153 |        |       |
| 120.000 |        |       | .4757 | .2382 | .1648  | .1128  |       | .0007  | -.2846 | -.4843 | -.6943 | -.2158 | -.0424 |        |       |
| X/LB    | .5786  | .4065 | .2747 | .3059 |        |        |       | .1785  |        |        |        |        |        |        |       |





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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB025)

ALPHA ( 2 ) = .058 BETA ( 2 ) = .181

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520 | .7290  | .7790 | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|-------|--------|-------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |       |        |       |       |        |        |        |        |        |        |
| 70.000  | .0171 | -.1350 | .1297 | .2368 | -.0028 | -.0959 | -.1421 |        |        |        |
| 90.000  | .0482 | -.0696 | .2055 | .2286 | -.0479 | -.1535 | -.1678 |        |        |        |
| 105.000 |       |        | .2933 | .2142 | -.1292 | -.2148 | -.2469 |        |        |        |
| 110.000 |       |        |       |       |        |        |        | -.4145 |        |        |
| 120.000 | .0660 | .1293  | .3433 | .2149 | -.1803 | -.2345 | -.2806 | -.3422 |        |        |
| 135.000 |       |        | .3787 | .4252 | -.1083 | -.1518 | -.1972 |        |        |        |
| 150.000 | .0863 | .1927  | .4182 | .4608 | -.0328 | -.1019 | -.1804 |        |        |        |
| 165.000 | .0918 |        | .4178 |       | .1795  | -.0381 | -.3370 |        |        |        |
| 180.000 | .0888 | .2145  | .4233 | .5533 |        |        |        |        |        |        |

ALPHA ( 2 ) = .056 BETA ( 3 ) = .4249 MACH = 1.0980 Q = 589.15 P = 710.01 RN/L = 3.1813

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| .000    | 1.3156 | .6764 | .2540 | .1684 | .0811 |       |       | .0251 | .0076  | -.0452 | -.0895 | -.0960 | -.1083 | -.0323 |       |
| 20.000  |        |       | .2521 | .1491 | .0441 | .0273 |       | .0286 | -.0120 |        |        |        |        |        |       |
| 40.000  |        |       | .3367 | .1591 | .0690 | .0610 |       | .0395 | -.0440 | -.0918 | -.1366 | -.1014 | -.0971 | .0150  |       |
| 55.000  |        |       | .3960 | .1970 | .1276 | .1090 |       | .0379 | -.0693 |        |        |        |        |        |       |
| 70.000  |        |       | .4340 | .2169 | .1453 | .1487 |       | .0504 | -.0844 | -.4903 | -.2890 | -.2159 | -.0471 |        |       |
| 90.000  | .5703  |       | .4742 | .2534 | .1572 | .1627 |       | .0563 | -.2225 | -.4994 | -.3782 | -.1738 | -.0365 |        |       |
| 120.000 |        |       | .5360 | .3663 | .2532 | .3133 |       | .2216 | -.2848 | -.4868 | -.6698 | -.1769 | -.0288 |        |       |
| 140.000 |        |       |       |       |       |       |       |       | -.4686 |        |        |        |        |        |       |
| 155.000 |        |       | .5737 | .4723 | .3727 | .4291 |       | .6542 | -.5544 | -.5095 | -.3379 | -.2652 | -.0364 |        |       |
| 165.000 |        |       |       |       |       |       |       |       | .3405  |        |        |        |        |        |       |
| 174.000 |        |       |       |       |       |       |       |       | .4230  |        |        |        |        |        |       |
| 180.000 |        |       |       |       |       |       |       |       |        | -.5118 | -.6215 | -.3042 | -.2826 | -.0444 |       |

1.3155 .8221 .6135 .5137 .4395 .5022 .8720

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

|         |       |        |       |        |        |        |        |  |  |  |  |  |  |  |  |
|---------|-------|--------|-------|--------|--------|--------|--------|--|--|--|--|--|--|--|--|
| .000    |       |        |       |        |        |        |        |  |  |  |  |  |  |  |  |
| 40.000  | .0010 | .0510  | .2108 | -.0671 | -.1533 | -.2167 | -.3144 |  |  |  |  |  |  |  |  |
| 70.000  | .0835 |        | .0179 | -.0587 | -.1538 | -.1827 | -.3227 |  |  |  |  |  |  |  |  |
| 90.000  | .0431 | -.1053 | .1098 | .2047  | -.0513 | -.1631 | -.2047 |  |  |  |  |  |  |  |  |
| 105.000 | .0757 | -.0210 | .1653 | .1900  | -.1150 | -.2179 | -.2245 |  |  |  |  |  |  |  |  |
| 120.000 |       |        | .2371 | .1531  | -.2085 | -.2788 | -.3082 |  |  |  |  |  |  |  |  |
| 135.000 |       |        |       |        |        |        |        |  |  |  |  |  |  |  |  |
| 150.000 | .1072 | .1093  | .2727 | .0734  | -.2878 | -.3479 | -.3875 |  |  |  |  |  |  |  |  |
|         |       |        | .3600 | .3945  | -.1978 | -.2598 | -.2951 |  |  |  |  |  |  |  |  |
|         | .1160 | .1953  | .3900 | .4150  | -.0987 | -.2151 | -.2884 |  |  |  |  |  |  |  |  |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073:0A148) -140A/B/C/R ORB FUSELAGE

(XE8825)

ALPHA ( 2 ) = .056 BETA ( 3 ) = 4.249

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 .1115 .3968 .1058 -.1333 -.3596  
180.000 .1091 .2143 .4702 .4750

ALPHA ( 3 ) = 3.948 BETA ( 1 ) = -3.871 MACH = 1.0978 Q = 599.38 P = 710.48 RN/L = 3.1840

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0680 .0230 .0450 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.3149 .8163 .3765 .2614 .1659 .0769 .0864 .0428 .0111 -.0410 -.0311 -.0817 -.0467  
20.000 .4191 .2688 .1420 .0769 .0770 .0223 .0223  
40.000 .5670 .3267 .2087 .1552 .0853 .0097 -.0166 -.0399 -.0083 -.0679 .0086  
55.000 .6440 .4250 .3201 .2478 .1708 .0722 .0722  
70.000 .6593 .4407 .3308 .2899 .1916 .0825 -.3315 -.1319 -.1435 -.1022  
90.000 .6628 .4545 .3362 .3207 .2236 .0269 -.3475 -.1862 -.2002 -.1119  
120.000 .6349 .4659 .3602 .4136 .4138 .0051 -.3174 -.5418 -.3118 -.1752  
140.000 .5551 .4324 .3460 .4323 .7850 .0855 -.3281 -.6769 -.4953 -.2099 -.0827  
150.000 .5551 .4324 .3460 .4323 .7850 .0855  
162.000 .5551 .4324 .3460 .4323 .7850 .0855  
165.000 .5551 .4324 .3460 .4323 .7850 .0855  
174.000 .5551 .4324 .3460 .4323 .7850 .0855  
180.000 .5551 .4324 .3460 .4323 .7850 .0855

PHI

1.3149 .7168 .4803 .4051 .3374 .4262 .8957 .8142  
.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .1648 .1652 .1243 .0282 -.0784 -.1739 -.2879  
40.000 .1066 .1416 .0352 -.1139 -.1100 -.3030  
70.000 -.0626 -.2524 -.3115 .1616 -.0192 -.0510 -.0424  
90.000 -.2288 -.1821 -.0848 .1367 -.0584 -.1746 -.0809  
105.000 .1319 .1485 -.1308 -.2439 -.0905  
110.000 .2798 .1408 -.1801 -.2430 -.2568  
120.000 .3077 .3091 -.1594 -.1568 -.1990  
135.000 .0389 .1878 .3125 .3127 -.0901 -.0757 -.1746  
150.000 .0630 .3134 .1914 .0118 -.3468  
180.000 .0693 .1405 .3132 .3920

AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE (XE8B25)

|               |       |              |      |      |   |        |   |   |        |   |   |        |      |   |        |
|---------------|-------|--------------|------|------|---|--------|---|---|--------|---|---|--------|------|---|--------|
| ALPHA ( 3 ) = | 3.948 | BETA ( 2 ) = | .177 | MACH | = | 1.0978 | Q | = | 599.38 | P | = | 710.48 | RN/L | = | 3.1840 |
|---------------|-------|--------------|------|------|---|--------|---|---|--------|---|---|--------|------|---|--------|

## SECTION (1) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| .000    | 1.3227 | .8244 | .3849 | .2657 | .1716 |       |       | .0963 |       | .0467  | .0161  | -.0311 | -.0323 | -.0544 | -.0372 |
| 20.000  |        |       | .4028 | .2603 | .1422 | .0701 |       | .0903 |       | .0316  |        |        |        |        |        |
| 40.000  |        |       | .4973 | .2928 | .1847 | .1356 |       | .1034 |       | .0271  | -.0168 | -.0565 | -.0273 | -.0757 | .0084  |
| 55.000  |        |       | .5457 | .3320 | .2399 | .1907 |       | .1332 |       | .0271  |        |        |        |        |        |
| 70.000  |        |       | .5498 | .3355 | .2367 | .1889 |       | .1389 |       | .0204  | -.3831 | -.2132 | -.2071 | -.1008 |        |
| 90.000  | .6829  |       | .5598 | .3516 | .2475 | .2487 |       | .1620 |       | -.0614 | -.4108 | -.2678 | -.2498 | -.0925 |        |
| 120.000 |        |       | .5619 | .3972 | .2950 | .3687 |       | .3441 |       | -.1166 | -.3831 | -.2636 | -.2180 | -.0942 |        |
| 140.000 |        |       |       |       |       |       |       |       |       | -.2134 |        |        |        |        |        |
| 150.000 |        |       | .5285 | .4221 | .3267 | .4212 |       | .7081 |       | -.5031 | -.6804 | -.4660 | -.1995 | -.0493 |        |
| 151.000 |        |       |       |       |       |       |       |       | .4236 |        |        |        |        |        |        |
| 162.000 |        |       |       |       |       |       |       |       | .4757 |        |        |        |        |        |        |
| 165.000 |        |       |       |       |       |       |       |       |       | -.5537 | -.5758 | -.3529 | -.2265 | -.0372 |        |
| 169.000 |        |       |       |       |       |       |       | .7681 |       |        |        |        |        |        |        |
| 174.000 |        |       |       |       |       |       | .8828 |       |       |        |        |        |        |        |        |
| 180.000 | 1.3227 | .7108 | .5035 | .4199 | .3474 | .4425 |       | .7680 |       | -.6778 | -.6700 | -.3321 | -.2355 | -.0368 |        |

三

|         |        |        |        |        |        |        |        |        |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|
| 100.000 | -.1373 | -.1294 | -.0372 | -.0631 | -.1596 | -.2758 | -.3068 | -.2695 |
| 40.000  | -.1391 | -.1431 | -.0494 | -.0944 | -.1210 | -.2777 | -.2412 | -.2186 |
| 70.000  | -.0695 | -.2485 | -      | -.1439 | -.0529 | -.1418 |        |        |
| 90.000  | -.0320 | -.1764 | -.0317 | -.1261 | -.1056 | -.1936 |        |        |
| 105.000 | -      | -.1601 | -.1317 | -.1779 | -.2633 | -.2994 |        |        |
| 120.000 | -.0009 | -.0431 | -.2392 | -.1122 | -.2825 | -.3239 | -.4028 |        |
| 135.000 | -.0515 | -.0941 | -.2825 | -.1333 | -.2022 | -.2502 | -.3601 |        |
| 150.000 | -.0707 | -.0679 | -.3257 | -.0825 | -.1512 | -.2273 |        |        |
| 165.000 | -.0679 | -.0777 | -.3420 | -.1375 | -.0697 | -.3453 |        |        |
| 180.000 |        |        |        | .5112  |        |        |        |        |

ALPHA ( 3 ) = 3.950    BETA ( 3 ) = 4.239    MACH = 1.0378    Q = 599.38    P = 710.48    RN/L = 3.1840

SECTION: ( ) CRIMINAL FILES -

## DEPENDENT VARIABLE CP

| FW     | 0.000  | 0.080 | 0.230 | 0.450 | 0.700 | 1.120 | 1.580 | 1.770  | 2.040  | 2.510  | 3.010  | 3.780  | 4.970  | 5.740 |
|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| 0.00   | 1.3065 | .8074 | .3766 | .2682 | .1632 |       | .0937 | .0450  | .0092  | -.0343 | -.0362 | -.0657 | -.0414 |       |
| 20.00  |        |       | .3692 | .2371 | .1231 | .0471 | .0844 | .0240  |        |        |        |        |        |       |
| 40.00  |        |       | .4167 | .2428 | .1469 | .1039 | .0977 |        |        |        |        |        |        |       |
| 60.00  |        |       | .4530 | .2438 | .1323 | .0944 | .0944 | -.0078 |        |        |        |        |        |       |
| 80.00  |        |       | .4375 | .2369 | .1483 | .1607 | .0937 | -.0321 | -.4303 | -.2860 | -.2627 | -.0927 |        |       |
| 90.00  |        | .5371 | .4538 | .2435 | .1485 | .1861 | .1039 | -.1426 | -.4721 | -.3361 | -.2539 | -.0639 |        |       |
| 120.00 |        |       | .4762 | .3155 | .2117 | .3086 | .2517 | -.2221 | -.6491 | -.1920 | -.0491 |        |        |       |





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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 ,

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(XE8823)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 7.938 BETA ( 2 ) = .185

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |       |        |        |        |        |        |        |
| 70.000  | -.1132 | -.3474 | -.3905 | .0348 | -.0840 | -.1177 | -.1480 |        |        |        |
| 90.000  | -.0655 | -.2257 | .0317  | .0068 | -.1644 | -.1800 | -.1694 |        |        |        |
| 105.000 |        |        |        | .0482 | -.2542 | -.2451 | -.2711 |        |        |        |
| 110.000 |        |        |        |       |        |        |        | -.3847 |        |        |
| 120.000 | -.0505 | -.1160 | .1245  | .0802 | -.2759 | -.3325 | -.3016 | -.3314 |        |        |
| 135.000 |        |        |        | .3476 | -.1815 | -.2635 | -.3022 |        |        |        |
| 150.000 | .0517  | -.0223 | .2347  | .5330 | -.1215 | -.2250 | -.2833 |        |        |        |
| 165.000 | .0678  |        | .2721  |       | .0801  | -.1577 | -.3546 |        |        |        |
| 180.000 | .0709  | -.0100 | .2962  | .5480 |        |        |        |        |        |        |

ALPHA ( 4 ) = 7.937 BETA ( 3 ) = 4.238 MACH = 1.0986 O = 599.84 P = 710.01 RW/L = 3.1812

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |       |       |
| 20.000  | 1.2762 | .9354 | .5050 | .3613 | .2494 |       |       | .1462 | .1097  | .0671  | .0375  | .0317  | .0006  | .0154 |       |
| 40.000  |        |       | .4895 | .3331 | .2151 | .1449 |       | .1299 | .0795  | .0711  | .0167  | -.0153 | -.0376 | .0102 |       |
| 55.000  |        |       | .4546 | .2648 | .1743 | .1415 |       | .1060 | .0403  |        |        |        |        |       |       |
| 70.000  |        |       | .4289 | .2357 | .1383 | .1649 |       | .1124 | .0108  | -.3684 | -.2822 | -.2751 | -.1838 |       |       |
| 90.000  |        | .4871 | .4260 | .2324 | .1338 | .1940 |       | .1323 | -.0822 | -.4342 | -.3147 | -.3270 | -.1424 |       |       |
| 120.000 |        |       | .4112 | .2570 | .1589 | .2981 |       | .2832 | -.1831 | -.4672 | -.6285 | -.2476 | -.0887 |       |       |
| 140.000 |        |       | .3838 | .2940 | .1933 | .3350 |       | .6166 | -.6045 | -.7307 | -.4467 | -.1966 | -.0503 |       |       |
| 151.000 |        |       |       |       |       |       |       | .3275 |        |        |        |        |        |       |       |
| 162.000 |        |       |       |       |       |       |       | .3800 |        |        |        |        |        |       |       |
| 165.000 |        |       |       |       |       |       |       |       | -.6119 | -.6718 | -.3972 | -.2035 | -.0522 |       |       |
| 174.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |       |       |
| 180.000 | 1.2762 | .5412 | .3957 | .3206 | .2309 | .3679 | .7922 | .7129 |        |        |        |        |        |       |       |
|         |        |       |       |       |       |       |       | .7207 |        |        |        |        |        |       |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |       |       |

PHI

| X/LB    | .000   | .2269  | .2527  | .1938  | .0904  | -.0146 | -.1112 | -.2352 | -.2736 | -.2474 | -.2360 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 40.000  | .2491  | .2125  | .1081  | .1081  | .1081  | .1030  | -.2505 |        |        |        |        |
| 70.000  | -.0976 | -.3242 | .0289  | .0289  | .1557  | -.2548 | -.2272 |        |        |        |        |
| 90.000  | -.0413 | -.2081 | -.1317 | -.0239 | -.2296 | -.2928 | -.3138 |        |        |        |        |
| 105.000 |        |        | .0263  | .0113  | -.2980 | -.3867 | -.4106 |        |        |        |        |
| 120.000 |        |        |        |        |        |        |        | -.4429 |        |        |        |
| 135.000 | .0453  | -.0783 | .1082  | -.0383 | -.3441 | -.4029 | -.5124 | -.4045 |        |        |        |
| 150.000 | .0892  | -.0075 | .2696  | .4147  | -.1977 | -.3193 | -.3772 |        |        |        |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8825)

ALPHA ( 4 ) = 7.937 BETA ( 3 ) = 4.238

SECTION ( 1 ) ORBITTER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520 | .7290 | .7790 | .8210 | .8790 | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|-------|-------|-------|-------|-------|--------|--------|-------|--------|--------|
| PHI     |       |       |       |       |       |        |        |       |        |        |
| 165.000 | .0890 | .2745 |       |       | .0091 | -.2586 | -.3802 |       |        |        |
| 180.000 | .0693 | .0109 | .4942 |       |       |        |        |       |        |        |

ALPHA ( 5 ) = 11.970 BETA ( 1 ) = -3.845 MACH = 1.0981 Q = 599.46 P = 710.25 RN/L = 3.1817

SECTION ( 1 ) ORBITTER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|
| PHI     |        |        |       |       |       |       |       |       |        |       |       |       |       |       |       |
| 20.000  | 1.2324 | 1.0534 | .6426 | .4718 | .3636 | .2657 | .2126 | .2126 | .1866  | .1254 | .1194 | .1131 | .0941 | .2175 |       |
| 40.000  |        |        | .6847 | .4959 | .3629 | .2657 | .2214 | .2214 | .1854  | .1357 | .1181 | .1378 | .0941 | .2483 |       |
| 60.000  |        |        | .7029 | .5196 | .3870 | .2921 | .2610 | .2610 | .2085  | .1746 |       |       |       |       |       |
| 80.000  |        |        | .7021 | .5021 | .3970 | .2921 | .2308 | .2308 | .1527  |       |       |       |       |       |       |
| 100.000 |        |        | .6371 | .4378 | .3227 | .2959 | .2339 | .2339 | .1015  |       |       |       |       |       |       |
| 120.000 |        | .7129  | .5772 | .3917 | .2979 | .2914 | .2562 | .2562 | .0143  |       |       |       |       |       |       |
| 140.000 |        |        | .4534 | .2912 | .1957 | .3001 | .4051 | .4051 | -.0877 |       |       |       |       |       |       |
| 160.000 |        |        | .3210 | .2279 | .1523 | .3121 | .7536 | .7536 | -.2195 |       |       |       |       |       |       |
| 180.000 |        |        |       |       |       |       | .4765 | .4765 | -.6595 |       |       |       |       |       |       |
|         |        |        |       |       |       |       | .4829 | .4829 | -.7391 |       |       |       |       |       |       |
|         |        |        |       |       |       |       | .7616 | .7616 | -.7529 |       |       |       |       |       |       |
|         |        |        |       |       |       |       | .6659 | .6659 | -.6734 |       |       |       |       |       |       |
|         |        |        |       |       |       |       | .9990 | .9990 | -.4313 |       |       |       |       |       |       |
|         |        |        |       |       |       |       | .9600 | .9600 | -.1944 |       |       |       |       |       |       |

X/LB

PHI

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| 20.000  | .3225  | .3213  | .2630  | .1652  | .0677  | -.0530 | -.1836 | -.2155 | -.2058 |        |
| 40.000  | .3469  | .2926  | .1903  | .0903  | .0254  | -.0049 | -.1899 | -.1788 | -.1908 |        |
| 60.000  | .1528  | -.3781 | -.4704 | -.0400 | -.0703 | -.2081 | -.2212 |        |        |        |
| 80.000  | -.0739 | -.2992 | -.3776 | .0003  | -.0895 | -.1970 | -.3222 |        |        |        |
| 100.000 |        |        | -.1041 | .0734  | -.1366 | -.2590 | -.3473 |        |        |        |
| 120.000 |        |        | .0699  | .1262  | -.1918 | -.2639 | -.2345 |        |        |        |
| 140.000 |        |        | .0655  | .3033  | -.2069 | -.2043 | -.2500 |        |        |        |
| 160.000 |        |        | -.0556 | .4533  | -.1390 | -.2097 | -.2774 |        |        |        |
| 180.000 |        |        | .0385  | .1647  | .0896  | -.1005 | -.3548 |        |        |        |
|         |        |        | .0839  | -.0315 | .2416  |        |        |        |        |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB825)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 5 ) = 11.975 BETA ( 3 ) = 4.250

SECTION ( 1 ) ORBITTER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|-------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |       |       |       |       |       |
| 140.000 |        |        |        |        |        |        |        |        |        |       |       |       |       |       |
| 150.000 |        |        |        |        |        |        |        |        |        |       |       |       |       |       |
| 151.000 |        |        |        |        |        |        |        |        |        |       |       |       |       |       |
| 162.000 |        |        |        |        |        |        |        |        |        |       |       |       |       |       |
| 165.000 |        |        |        |        |        |        |        |        |        |       |       |       |       |       |
| 169.000 |        |        |        |        |        |        |        |        |        |       |       |       |       |       |
| 174.000 |        |        |        |        |        |        |        |        |        |       |       |       |       |       |
| 180.000 |        |        |        |        |        |        |        |        |        |       |       |       |       |       |
| 1.2189  | .3715  | .2541  | .2265  | .1246  | .3113  | .7529  | .6779  |        |        |       |       |       |       |       |
| .6530   | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |       |       |       |       |       |
| PHI     |        |        |        |        |        |        |        |        |        |       |       |       |       |       |
| .000    |        |        |        |        |        |        |        |        |        |       |       |       |       |       |
| 40.000  | .3193  | .3212  | .2595  | .1466  | .0434  | -.0620 | -.2028 |        |        |       |       |       |       |       |
| 50.000  | .3243  | .2773  | .2773  | .1694  | .0039  | -.0523 | -.2132 |        |        |       |       |       |       |       |
| 70.000  | -.1277 | -.4290 | -.4598 | -.1525 | -.2306 | -.2862 | -.2271 |        |        |       |       |       |       |       |
| 90.000  | -.0726 | -.3087 | -.3493 | -.1336 | -.3826 | -.2840 | -.3035 |        |        |       |       |       |       |       |
| 105.000 |        |        |        |        |        |        |        |        |        |       |       |       |       |       |
| 110.000 |        |        |        |        |        |        |        |        |        |       |       |       |       |       |
| 120.000 | .0342  | -.1170 | .0172  | -.0677 | -.3924 | -.5151 | -.5980 |        |        |       |       |       |       |       |
| 135.000 |        |        |        |        |        |        |        |        |        |       |       |       |       |       |
| 150.000 | .0885  | -.0429 | .1331  | .2193  | -.2838 | -.3692 | -.4120 |        |        |       |       |       |       |       |
| 160.000 | .0987  |        | .2307  | .4657  | -.2111 | -.3506 | -.4139 |        |        |       |       |       |       |       |
| 180.000 | .0744  | -.0403 | .2055  |        | -.0078 | -.3067 | -.3832 |        |        |       |       |       |       |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8826) ( 05 AUG 75 )

## REFERENCE DATA

SHLF = 2190.0000 SQ.FT. XMRP = 1076.6800 IN. XO  
 LREF = 474.8000 IN. YMRP = .0000 IN. YO  
 BRCF = 936.0680 IN. ZMRP = 375.0000 IN. ZO  
 SCALE = .0300

## PARAMETRIC DATA

RUDDER = .000 SPDRK = .000  
 BDFLAP = .000 L-ELVN = .000  
 R-ELVN = .000 MACH = .900

ALPHA ( 1 ) = -3.986 BETA ( 1 ) = -3.845 MACH = .89940 Q = 599.79 P = 1059.2 RN/L = 3.5659

## SECTION ( 1 ) ORBITTER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | PHI    | .000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 20.000  | 1.1883 | .3558 | -.0800 | -.1131 | -.1716 | -.2315 | -.2457 | -.2638 | -.2162 | -.2171 | -.2023 | -.0738 | -.0330 | -.0004 | -.0178 |        |
| 40.000  |        |       | -.0521 | -.1381 | -.2158 | -.2499 | -.2638 | -.2638 | -.2638 | -.2470 | -.4385 | -.4125 | -.1285 | -.0869 | -.0434 | -.0451 |
| 55.000  |        |       | .1465  | -.1103 | -.2158 | -.2499 | -.2638 | -.2638 | -.2638 | -.2860 | -.2305 | -.7247 | -.0190 | .0571  | .1024  |        |
| 70.000  |        |       | .3362  | .0893  | -.0036 | -.1010 | -.0974 | -.0974 | -.0974 | -.2305 | -.3084 | -.6633 | -.0631 | .0421  | .0910  |        |
| 90.000  |        | .7297 | .4593  | .2174  | .1233  | .0586  | -.0725 | -.0725 | -.0725 | -.2331 | -.5863 | -.1244 | .0276  | .0647  |        |        |
| 120.000 |        |       | .5490  | .3077  | .2019  | .1102  | .1811  | .1811  | .1811  | -.1616 | -.2771 | -.8605 | -.0726 | .0210  | .0445  |        |
| 140.000 |        |       | .6339  | .4518  | .3291  | .3191  | .6540  | .6540  | .6540  | .3274  | .3871  |        |        |        |        |        |
| 150.000 |        |       | .6363  | .4979  | .3999  | .4132  |        |        |        |        |        |        |        |        |        |        |
| 162.000 |        |       |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 165.000 |        |       |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 169.000 |        |       |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 174.000 |        |       |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 180.000 | 1.1883 | .8407 | .5821  | .4657  | .3870  | .4096  | .8242  | .7149  | .6387  | -.8397 | -.7773 | -.0425 | .0138  | .0405  |        |        |
|         | .6520  | .7290 | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | .9990  | -.9428 | -.7671 | -.0168 | .0058  | .0279  |        |        |

X/LB

PHI

.000  
 40.000  
 70.000  
 90.000  
 105.000  
 110.000  
 120.000  
 135.000  
 150.000  
 165.000  
 180.000

-.1357  
 -.2328  
 .0270  
 .0521  
 .0596  
 .0670  
 .0639  
 .0536  
 -.2016  
 -.2376  
 .0540  
 .1206  
 .1862  
 .2851  
 .3504  
 .3529  
 .3320  
 .3131  
 -.3458  
 -.3432  
 .1567  
 .1957  
 .2461  
 .3467  
 .4344  
 .4377  
 .4991  
 -.3808  
 -.3422  
 -.0792  
 -.0352  
 -.0885  
 -.2483  
 -.2188  
 -.1386  
 -.1045  
 -.0750  
 -.2486  
 -.2602  
 -.0661  
 -.1088  
 -.1637  
 -.2090  
 -.1875  
 -.1928  
 -.2044

-.0768  
 -.1406  
 -.1487  
 -.2909  
 -.2247

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## TABULATED PRESSURE DATA - OA148 ( AMES 11-073-1 )

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AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

(XEB826)

ALPHA ( 1 ) = -3.977 BETA ( 2 ) = .190 MACH = .89940 Q = 599.79 P = 1059.2 RN/L = 3.5659

## SECTION ( 1 ) ORBITER FUSELAGE

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | 1.1939 | .3517  | -.0747 | -.0981 | -.1806 |        |       | -.2198 | -.2136 | -.1798 | -.0682 | -.0236 | .0114  | -.0097 |       |
| 20.000  |        | -.0606 | -.1293 | -.1293 | -.2186 | -.2298 |       | -.2466 | -.2293 |        |        |        |        |        |       |
| 40.000  |        | .0951  | -.1160 | -.1160 | -.2127 | -.2125 |       | -.3101 | -.3449 | -.3318 | -.0731 | -.0352 | -.0080 | -.0119 |       |
| 55.000  |        |        | .2403  | .0136  | -.0684 | -.1370 |       | -.2442 | -.3361 |        |        |        |        |        |       |
| 70.000  |        |        | .3421  | .1037  | -.0219 | -.0269 |       | -.1837 | -.3173 | -.7606 | -.0317 | .0500  | .0857  |        |       |
| 90.000  | .5784  |        | .4235  | .1814  | .0956  | .0058  |       | -.1754 | -.4517 | -.7211 | -.0856 | .0362  | .0678  |        |       |
| 120.000 |        |        | .5283  | .3437  | .2175  | .2269  |       | -.0557 | -.4227 | -.6678 | -.1642 | .0130  | .0427  |        |       |
| 140.000 |        |        |        |        |        |        |       |        | -.4432 |        |        |        |        |        |       |
| 160.000 |        |        |        |        | .7532  | .3683  |       | .5740  | -.7892 | -.8318 | -.0357 | .0227  | .0445  |        |       |
| 180.000 |        |        |        |        |        |        |       |        | .2255  |        |        |        |        |        |       |
|         |        |        |        |        |        |        |       |        | .3057  |        |        |        |        |        |       |
|         |        |        |        |        |        |        |       |        |        | -.6377 | -.7411 | -.0184 | .0232  | .0514  |       |
|         |        |        |        |        |        |        | .8110 | .6709  | -.9448 | -.7439 | -.0052 | .0249  | .0471  |        |       |
| X/LB    | 1.1939 | .8322  | .5902  | .4695  | .3936  | .4155  | .8110 | .6709  | -.9448 | -.7439 | -.0052 | .0249  | .0471  |        |       |
|         | .6520  | .7290  | .7730  | .8210  | .8790  | .9210  | .9600 | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |

X/LB

PHI

40.000

70.000

90.000

110.000

130.000

150.000

165.000

180.000

ALPHA ( 1 ) = -2.985 BETA ( 3 ) = 4.276 MACH = .89940 Q = 599.79 P = 1059.2 RN/L = 3.5659

## SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | 1.1772 | .3402  | -.0800 | -.1048 | -.1836 |        |       | -.2103 | -.2550 | -.2214 | -.0781 | -.0492 | -.0010 | -.0283 |       |
| 20.000  |        | -.0788 | -.1308 | -.1308 | -.2234 | -.2173 |       | -.2264 | -.2733 |        |        |        |        |        |       |
| 40.000  |        | .0345  | -.1372 | -.1372 | -.2042 | -.2006 |       | -.2722 | -.3399 | -.3587 | -.0525 | -.0271 | -.0074 | -.0066 |       |
| 55.000  |        |        | .1431  | .0563  | -.1240 | -.1638 |       | -.2628 | -.3363 |        |        |        |        |        |       |
| 70.000  |        |        | .2261  | .0025  | -.0705 | -.0908 |       | -.2358 | -.4162 | -.8520 | -.1200 | .0400  | .0682  |        |       |
| 90.000  | .4196  |        | .3026  | .0579  | -.0032 | -.0814 |       | -.2578 | -.6005 | -.7216 | -.2767 | .0402  | .0626  |        |       |
| 120.000 |        |        | .4205  | .2312  | .1014  | .1199  |       | -.0658 | -.6064 | -.8177 | -.3037 | -.0228 | .0208  |        |       |

X/LB

PHI

20.000

40.000

55.000

70.000

90.000

120.000



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TABULATED PRESSURE DATA - OA148 ( AMES 11-073-1 )

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(XE8826)

AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = .061 BETA ( 1 ) = -3.869

## SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660 | .1770  | .2040   | .2510  | .3010  | .3780 | .4970 | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|--------|---------|--------|--------|-------|-------|-------|
| PHI     |        |        |        |        |        |        |        |       |        |         |        |        |       |       |       |
| 180.000 | 1.2041 | .7108  | .4565  | .3561  | .2843  | .3316  |        | .5846 |        | -1.0463 | -.8672 | -.0696 | .0150 | .0037 |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460  |        |        |       |       |       |
| PHI     |        |        |        |        |        |        |        |       |        |         |        |        |       |       |       |
| .000    | -.0300 | -.0773 | -.1507 | -.2772 | -.3934 | -.4463 | -.2645 |       | -.0803 | -.1501  |        |        |       |       |       |
| 40.000  | -.0891 | -.1356 | -.2647 | -.3593 | -.3898 | -.2871 |        |       | -.1382 | -.1559  |        |        |       |       |       |
| 70.000  | -.1096 | -.2167 | -.0074 | .1416  | -.0734 | -.0236 | -.0557 |       |        |         |        |        |       |       |       |
| 90.000  | -.0674 | -.1411 | .0602  | .1714  | -.1477 | -.0951 | -.1068 |       |        |         |        |        |       |       |       |
| 105.000 |        | .1237  | .2193  | -.2436 | -.1350 | -.1553 |        |       |        |         |        |        |       |       |       |
| 110.000 |        |        |        |        |        |        |        |       |        |         |        |        |       |       |       |
| 120.000 | -.0620 | -.0250 | .2462  | .2850  | -.3773 | -.2179 | -.1899 |       |        |         |        |        |       |       |       |
| 135.000 |        |        | .3129  | .3531  | -.2029 | -.1576 | -.1948 |       |        |         |        |        |       |       |       |
| 150.000 | -.0145 | .0673  | .3051  | .2915  | -.2207 | -.1309 | -.2173 |       |        |         |        |        |       |       |       |
| 165.000 | -.0043 | .2788  |        | .0325  | -.1205 | -.2005 |        |       |        |         |        |        |       |       |       |
| 180.000 | -.0084 | .0711  | .2621  | .4023  |        |        |        |       |        |         |        |        |       |       |       |

ALPHA ( 2 ) = .067 BETA ( 2 ) = .174 MACH = .85877 Q = 559.18 P = 1059.7 RN/L = 3.5651

## SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |       |       |
| .000    | 1.2086 | .5225  | .0795  | -.0057 | -.0813 |        |        | -.1485 |        | -.1730 | -.1924 | -.0658 | -.0189 | .0287 | .0235 |
| 20.000  |        |        | .1007  | -.0090 | -.1110 | -.1437 |        | -.1700 |        | -.1840 |        |        |        |       |       |
| 40.000  |        |        | .2333  | .0171  | -.0728 | -.1176 |        | -.1908 |        | -.2209 | -.2807 | -.0627 | -.0129 | .0147 | .0418 |
| 55.000  |        |        | .3329  | .1181  | .0320  | -.0316 |        | -.1357 |        | -.2434 |        |        |        |       |       |
| 70.000  |        |        | .3830  | .1563  | .0676  | .0318  |        | -.1128 |        | -.2647 | -.7337 | -.0888 | .0016  | .0382 |       |
| 90.000  | .5687  |        | .4279  | .2039  | .0882  | .0594  |        | -.1064 |        | -.3866 | -.7189 | -.1202 | .0054  | .0401 |       |
| 120.000 |        |        | .4790  | .3097  | .1928  | .2149  |        | .0930  |        | -.4182 | -.6870 | -.2199 | .0090  | .0234 |       |
| 140.000 |        |        |        |        |        |        |        |        |        | -.5020 |        |        |        |       |       |
| 150.000 |        |        | .4865  | .3711  | .2713  | .3111  |        | .5471  |        | -.8371 | -.9532 | -.1655 | .0197  | .0121 |       |
| 151.000 |        |        |        |        |        |        |        |        | .2070  |        |        |        |        |       |       |
| 162.000 |        |        |        |        |        |        |        |        | .2735  |        |        |        |        |       |       |
| 165.000 |        |        |        |        |        |        |        | .6456  |        |        |        |        |        |       |       |
| 169.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |       |       |
| 174.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |       |       |
| 180.000 | 1.2086 | .7030  | .4748  | .3799  | .2971  | .3473  | .7712  | .6253  |        | -.9417 | -.8463 | -.0731 | .0178  | .0142 |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |       |       |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |       |       |
| .000    | -.0361 | -.0860 | -.1539 | -.2666 | -.3845 | -.3927 | -.2519 |        | -.0677 | -.1392 |        |        |        |       |       |
| 40.000  | -.0736 |        | -.1429 | -.2518 | -.3353 | -.3632 | -.2472 |        | -.1112 | -.1352 |        |        |        |       |       |

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(XEB826)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = .067 BETA ( 2 ) = .174

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |       |        |        |        |        |        |        |
| 70.000  | -.1254 | -.2089 | -.0506 | .0781 | -.2176 | -.0911 | -.0918 |        |        |        |
| 90.000  | -.0772 | -.1482 | .0285  | .0949 | -.2920 | -.1537 | -.1298 |        |        |        |
| 105.000 |        |        | .0972  | .1283 | -.4200 | -.1921 | -.1787 |        |        |        |
| 110.000 |        |        |        |       |        |        |        | -.2634 |        |        |
| 120.000 | -.0305 | -.0085 | .1762  | .2358 | -.5039 | -.2853 | -.2545 | -.2138 |        |        |
| 135.000 |        |        | .2426  | .3924 | -.3829 | -.2408 | -.2411 |        |        |        |
| 150.000 | -.0019 | .0574  | .2711  | .4526 | -.3063 | -.2713 | -.2519 |        |        |        |
| 165.000 | .0009  |        | .2666  |       | -.1015 | -.2489 | -.1907 |        |        |        |
| 180.000 | .0047  | .0747  | .2732  | .4762 |        |        |        |        |        |        |

ALPHA ( 2 ) = .063 BETA ( 3 ) = .4252 MACH = .89877 Q = 599.18 P = 1059.7 RN/L = 3.5651

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460  | .0700  | .1120  | .1580 | .1660  | .1770    | .2040  | .2510  | .3010  | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|--------|--------|--------|-------|--------|----------|--------|--------|--------|-------|-------|-------|
| PHI     |        |       |       |        |        |        |       |        |          |        |        |        |       |       |       |
| .000    | 1.1949 | .5011 | .0607 | -.0052 | -.0899 |        |       | -.1563 | -.1723   | -.1809 | -.0731 | -.0205 | .0255 | .0229 |       |
| 20.000  |        |       | .0643 | -.0279 | -.1193 | -.1451 |       | -.1636 | -.1845   |        |        |        |       |       |       |
| 40.000  |        |       | .1542 | -.0196 | -.1089 | -.1161 |       | -.1743 | -.2065   | -.2760 | -.0506 | -.0025 | .0170 | .0554 |       |
| 55.000  |        |       | .2255 | .0297  | -.0425 | -.0771 |       | -.1818 | -.2740   |        |        |        |       |       |       |
| 70.000  |        |       | .2625 | .0491  | -.0271 | -.0428 |       | -.1780 | -.3270   | -.7859 | -.0876 | .0068  | .0331 |       |       |
| 90.000  | .4104  |       | .3050 | .0847  | -.0125 | -.0298 |       | -.1863 | -.4994   | -.7871 | -.1412 | .0153  | .0328 |       |       |
| 120.000 |        |       | .3753 | .2062  | .0880  | .1317  |       | -.0206 | -.5639   | -.7845 | -.2159 | .0094  | .0165 |       |       |
| 140.000 |        |       | .4243 | .3206  | .2147  | .2539  |       | .4549  | -.9246   | -.9681 | -.1163 | .0118  | .0047 |       |       |
| 150.000 |        |       |       |        |        |        |       |        | .0943    |        |        |        |       |       |       |
| 151.000 |        |       |       |        |        |        |       |        | .1818    |        |        |        |       |       |       |
| 165.000 |        |       |       |        |        |        |       |        |          | -.8797 | -.8640 | -.0824 | .0099 | .0051 |       |
| 169.000 |        |       |       |        |        | .7116  |       |        |          |        |        |        |       |       |       |
| 174.000 |        |       |       |        |        |        |       | .5910  |          |        |        |        |       |       |       |
| 180.000 | 1.1949 | .6822 | .4677 | .3550  | .2832  | .3369  |       | .6094  | -.1.0583 | -.8702 | -.0698 | .0094  | .0023 |       |       |

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| .000    | -.0354 | -.0792 | -.1517 | -.2725 | -.3825 | -.4145 | -.2636 |        |        |        |
| 40.000  | -.0484 |        | -.1403 | -.2543 | -.3672 | -.3849 | -.2189 |        | -.0754 | -.1422 |
| 70.000  | -.1204 | -.1965 | -.0685 | .0252  | .3208  | -.2794 | -.1544 |        | -.0973 | -.1441 |
| 90.000  | -.0714 | -.1261 | -.0316 | .0326  | .3987  | -.3782 | -.1706 |        |        |        |
| 105.000 |        |        | .0615  | .0394  | -.5228 | -.5320 | -.1967 |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.2767 |        |        |
| 120.000 | -.0265 | -.0272 | .1158  | .0905  | -.6436 | -.6130 | -.2253 |        |        |        |
| 135.000 |        |        | .2131  | .3398  | -.5259 | -.5168 | -.4758 |        |        |        |
| 150.000 | .0018  | .0494  | .2436  | .4240  | -.4045 | -.4790 | -.3732 |        |        |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XE8826)

AMES 11-073(CA148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = .063 BETA ( 3 ) = 4.252

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 -.0008 .2499  
180.000 -.0090 .0717 .2706 .4229  
- .1919 -.4179 -.1966

ALPHA ( 3 ) = 3.954 BETA ( 1 ) = -3.877 MACH = .89787 Q = 598.42 P = 1060.5 RV/L = 3 5652

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

1.1930 .6625 .2072 .1041 .0112  
20.000 .2476 .1074 -.0095  
40.000 .4148 .1651 .0014  
55.000 .4048 .2723 .0915  
70.000 .5133 .2898 .1863 .1306  
90.000 .5213 .3079 .1936 .1536  
120.000 .4905 .3250 .2172 .2514  
140.000  
150.000 .4124 .2863 .2072 .2679  
162.000  
165.000  
169.000  
174.000  
180.000  
- .0963  
- .1067  
- .0975  
- .0186  
- .0051  
- .0205  
- .2023  
- .3516  
- .4547  
- .1010  
- .4324  
- .0039  
- .0203  
- .1025  
- .1218  
- .1316  
- .1813  
- .0403  
- .0157  
- .0569  
- .1002  
- .1144  
- .1333  
- .5825  
- .1515  
- .0258  
- .2085  
- .6221  
- .2096  
- .0350  
- .0117  
- .2596  
- .6188  
- .3444  
- .0915  
- .0611  
- .2717  
- .3013  
- .9617  
- .8148  
- .4143  
- .0338  
- .0116  
- .10956  
- .9300  
- .2609  
- .0390  
- .0050

X/LB

1.1930 .5663 .3302 .2583 .1951 .2589 .7403

PHI

.0493 -.0012 -.0803 -.2111 -.3093 -.3726 -.4004  
40.000 .0296 -.0599 -.1933 -.2866 -.3321 -.3315  
70.000 -.2164 -.4450 -.0867 .1181 .0535 .0106 .0445  
90.000 -.1658 -.3531 -.0803 .1349 .1113 .0737 .1021  
105.000 .0940 .1524 .2178 .1363 .1546  
110.000  
120.000 -.1689 .2109 .1574 .3503 .2024 .1761  
140.000 .2582 .2582 .2518 .1839 .2062  
150.000 -.0819 -.0009 .1775 .2667 .1605 .2062  
165.000 -.0779 .2154  
180.000 -.0669 .0061 .1251 .3384  
- .2727  
- .2013  
- .0651  
- .1382  
- .1397  
- .1454

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TABULATED PRESSURE DATA - 0A143 ( AMES 11-073-1 )

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(XEB826)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 3 ) = 3.955 BETA ( 2 ) = .186 MACH = .89787 Q = 598.42 P = 1060.5 RV/L = 3.9552

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770   | .2040   | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|--------|-------|-------|--------|--------|-------|--------|---------|---------|--------|--------|--------|-------|-------|
| PHI     | .000   | 1.1979 | .6650 | .2150 | .1083  | .0187  |       | -.0850 | -.1095  | -.1383  | -.0491 | .0044  | .0654  | .0835 |       |
| 20.000  |        |        | .2369 | .1008 | -.0065 | -.0673 |       | -.0918 | -.1275  | -.1388  | -.0546 | .0161  | .0537  | .1053 |       |
| 40.000  |        |        | .3444 | .1360 | .0291  | -.0203 |       | -.0906 | -.1630  | -.1630  |        |        |        |       |       |
| 55.000  |        |        | .3919 | .1856 | .0935  | .0285  |       | -.0700 | -.2047  | -.6682  | -.1574 | -.0403 | .0073  |       |       |
| 70.000  |        |        | .4022 | .1852 | .0911  | .0578  |       | -.0726 | -.3147  | -.7276  | -.1798 | -.0305 | .0082  |       |       |
| 90.000  |        | .5381  | .4167 | .2006 | .0975  | .0810  |       | -.0565 | -.3902  | -.7034  | -.2731 | -.0213 | -.0081 |       |       |
| 120.000 |        |        | .4141 | .2514 | .1545  | .1982  |       | .1194  | -.5134  |         |        |        |        |       |       |
| 140.000 |        |        |       |       |        |        |       |        | -.8827  | -.10413 | -.3773 | .0399  | -.0020 |       |       |
| 150.000 |        |        | .3831 | .2783 | .1878  | .2501  |       | .5188  |         |         |        |        |        |       |       |
| 151.000 |        |        |       |       |        |        |       | .1861  |         |         |        |        |        |       |       |
| 162.000 |        |        |       |       |        |        |       | .2392  |         |         |        |        |        |       |       |
| 165.000 |        |        |       |       |        |        |       |        | -.9819  | -.9462  | -.2283 | .0349  | .0018  |       |       |
| 169.000 |        |        |       |       |        |        |       | .6042  |         |         |        |        |        |       |       |
| 174.000 |        |        |       |       |        |        | .7188 | .5792  | -.10262 | -.9286  | -.1712 | .0325  | .0018  |       |       |
| 180.000 |        |        |       |       |        |        |       |        |         |         |        |        |        |       |       |
| X/LB    | 1.1979 | .5689  | .3583 | .2695 | .2013  | .2752  |       |        |         |         |        |        |        |       |       |
|         | .6520  | .7290  | .7790 | .8210 | .8790  | .9210  | .9600 | .9990  | 1.0180  | 1.0460  |        |        |        |       |       |

PHI

|         |        |        |        |        |        |        |        |
|---------|--------|--------|--------|--------|--------|--------|--------|
| .000    | .0488  | -.0030 | -.0799 | -.2078 | -.2958 | -.3696 | -.3382 |
| 40.000  | .0360  | -.0654 | -.1875 | -.2740 | -.3260 | -.3022 | -.0826 |
| 70.000  | -.2345 | -.4287 | .1224  | .0546  | .1554  | -.0724 | -.1071 |
| 90.000  | -.1778 | -.3466 | -.0256 | .0540  | .2617  | -.1352 | -.1276 |
| 105.000 |        |        | .0555  | .0689  | -.3807 | -.1850 |        |
| 110.000 |        |        |        |        |        |        |        |
| 120.000 | -.1204 | -.1199 | .1198  | .1815  | -.5140 | -.2730 | -.2591 |
| 135.000 |        |        | .1673  | .3975  | -.4185 | -.2414 | -.1970 |
| 150.000 | -.0690 | -.0303 | .1988  | .4654  | -.3214 | -.2710 |        |
| 165.000 | -.0609 |        | .2031  |        | -.1436 | -.2598 |        |
| 180.000 | -.0540 | .0074  | .2109  | .4252  |        |        |        |

ALPHA ( 3 ) = 3.963 BETA ( 3 ) = .4243 MACH = .89787 Q = 598 P = 1060.5 RV/L = 3.9552

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780 | .4970 | .5740 |
|---------|-------|--------|-------|-------|--------|--------|-------|--------|--------|--------|--------|--------|-------|-------|-------|
| PHI     | .000  | 1.1874 | .6556 | .2112 | .1066  | .0041  |       | -.0859 | -.1107 | -.1353 | -.0669 | .0041  | .0640 | .0735 |       |
| 20.000  |       |        | .2021 | .0751 | -.0268 | -.0703 |       | -.1013 | -.1267 | -.2151 | -.0865 | .0093  | .0433 | .1058 |       |
| 40.000  |       |        | .2532 | .0835 | -.0323 | -.0385 |       | -.1011 | -.1473 | -.2046 |        |        |       |       |       |
| 55.000  |       |        | .2731 | .0835 | .0076  | -.0311 |       | -.1212 | -.2046 | -.7234 | -.1350 | -.0335 | .0075 |       |       |
| 70.000  |       |        | .2791 | .0764 | -.0057 | -.0074 |       | -.1355 | -.2587 | -.7937 | -.1640 | -.0147 | .0100 |       |       |
| 90.000  |       | .3764  | .2972 | .0346 | .0000  | .0051  |       | -.1348 | -.4110 | -.7937 | -.1640 | -.0147 | .0100 |       |       |
| 120.000 |       |        | .3219 | .1636 | .0661  | .1296  |       | .0156  | -.5216 | -.7770 | -.2883 | .0148  | .0063 |       |       |



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB826)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 7.926 BETA ( 1 ) = -3.870

SECTION ( 1 ) ORBITTER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 180.000 | 1.1599 | .4213  | .2161  | .1737  | .1038  | .2004  |        | .4973  |        | -.9027 | -.6588 | -.4828 | -.0916 | -.0008 |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| .000    | .1289  | .0815  | -.0010 | -.1360 | -.2093 | -.3501 | -.4851 |        | -.0465 | -.1213 |        |        |        |        |       |
| 40.000  | .1345  |        | .0217  | -.1108 | -.2148 | -.3054 | -.4212 |        | -.1136 | -.1267 |        |        |        |        |       |
| 70.000  | -.3092 | -.5733 | -.1302 | .0933  | -.0856 | -.0587 | -.0715 |        |        |        |        |        |        |        |       |
| 90.000  | -.2515 | -.4812 | -.0525 | .0743  | -.1302 | -.1237 | -.1250 |        |        |        |        |        |        |        |       |
| 105.000 |        |        | .0542  | .0802  | -.2089 | -.1708 | -.1728 |        |        |        |        |        |        |        |       |
| 110.000 |        |        |        |        |        |        |        | -.2536 |        |        |        |        |        |        |       |
| 120.000 |        |        |        |        |        |        |        | -.1925 |        |        |        |        |        |        |       |
| 135.000 | -.3063 | -.2593 | .1062  | .0812  | -.3280 | -.2280 | -.1833 |        |        |        |        |        |        |        |       |
| 150.000 |        |        | .1061  | .1946  | -.3637 | -.2182 | -.2216 |        |        |        |        |        |        |        |       |
| 165.000 | -.1486 | -.0947 | .0977  | .2687  | -.2852 | -.1966 | -.2013 |        |        |        |        |        |        |        |       |
| 180.000 | -.1208 | -.0705 | .1098  | .3100  | -.0525 | -.1452 | -.1710 |        |        |        |        |        |        |        |       |

ALPHA ( 4 ) = 7.938 BETA ( 2 ) = .179 MACH = .89930 Q = 600.20 P = 1060.2 RN/L = 3.5747

SECTION ( 1 ) ORBITTER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040    | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|--------|--------|--------|--------|--------|--------|----------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |        |        |        |        |        |        |          |        |        |        |        |       |
| .000    | 1.1663 | .8072 | .3651 | .2255  | .1196  |        |        | -.0070 |        | -.0333   | -.0531 | -.0176 | .0464  | .1253  | .1508 |
| 20.000  |        |       | .3834 | .2198  | .1035  | .0280  |        | -.0153 |        | -.0509   |        |        |        |        |       |
| 40.000  |        |       | .4438 | .2430  | .1398  | .0681  |        | .0010  |        | -.0519   | -.1137 | -.0477 | .0471  | .1010  | .1768 |
| 55.000  |        |       | .4288 | .2269  | .1371  | .0633  |        | -.0259 |        | -.1040   |        |        |        |        |       |
| 70.000  |        |       | .3951 | .1970  | .0979  | .0754  |        | -.0320 |        | -.1537   | -.5884 | -.2288 | -.0881 | -.0193 |       |
| 90.000  |        | .4921 | .3775 | .1880  | .0884  | .0872  |        | -.0217 |        | -.2539   | -.6874 | -.2394 | -.0808 | -.0222 |       |
| 120.000 |        |       | .3332 | .1824  | .0874  | .1693  |        | .1344  |        | -.3559   | -.7052 | -.3217 | -.1094 | -.0628 |       |
| 140.000 |        |       |       |        |        |        |        |        |        | -.4959   |        |        |        |        |       |
| 150.000 |        |       | .2739 | .1843  | .0934  | .1948  |        | .4997  |        | -.8351   | -.6436 | -.4690 | -.0191 | -.0147 |       |
| 162.000 |        |       |       |        |        |        |        |        | .1752  |          |        |        |        |        |       |
| 165.000 |        |       |       |        |        |        |        |        | .2078  |          |        |        |        |        |       |
| 169.000 |        |       |       |        |        |        |        |        |        | -.1.0300 | -.6560 | -.4671 | .0294  | .0056  |       |
| 174.000 |        |       |       |        |        |        |        |        |        |          |        |        |        |        |       |
| 180.000 | 1.1663 | .4131 | .2354 | .1502  | .1012  | .2111  | .6619  | .5559  |        | -.1.1237 | -.6454 | -.3491 | .0201  | .0091  |       |
| X/LB    | .6520  | .7290 | .7790 | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460   |        |        |        |        |       |
| PHI     |        |       |       |        |        |        |        |        |        |          |        |        |        |        |       |
| .000    | .1360  | .0874 | .0058 | -.1285 | -.2070 | -.3475 | -.4682 |        |        |          |        |        |        |        |       |
| 40.000  | .1435  |       | .0202 | -.1088 | -.2123 | -.3008 | -.4339 |        | -.0420 | -.1217   |        |        |        |        |       |
|         |        |       |       |        |        |        |        |        | -.0980 | -.1198   |        |        |        |        |       |



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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ALPHA ( 4 ) = 7.933 BETA ( 3 ) = 4.243

AMES 1.-073(0A148) -140A/B/C/R ORB FUSELAGE

## SECTION ( 1 ) ORBITTER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 -.1104 .1149  
180.000 -.1287 -.0856 .1069 .3609  
-2.399 -.4421 -.1780

ALPHA ( 5 ) = 11.953 BETA ( 1 ) = -3.854 MACH = .89857 Q = .99.22 P = 1050.2 RN/L = 3.5673

## SECTION ( 1 ) ORBITTER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.0976 .9234 .5013 .3351 .2267  
20.000 .5486 .3607 .2319  
40.000 .6180 .4012 .2840  
60.000 .5640 .2632 .1946  
70.000 .4916 .3020 .1857 .1480  
90.000 .4300 .2532 .1608 .1390  
120.000 .2987 .1495 .0604 .1425  
140.000 .1080 .0834 .0213 .1416  
150.000 .0752  
160.000 .0814  
170.000 .1156  
180.000 .0617  
-.0188  
-.0620  
-.1436  
-.0549  
-.0599  
-.1874  
-.3791  
-.5634  
-.5620  
-.5785  
-.5117  
-.2411  
-.1909  
-.2387  
-.2389  
-.8368  
-.5878  
-.5661  
-.2221  
-.0495  
-.7237  
-.6016  
-.5573  
-.2007  
-.0154

PHI

.000 .2074 .1551 .0699 -.0515 -.1513 -.3108 -.4347  
40.000 .2344 .1028 -.0274 -.1915 -.2586 -.4545  
70.000 -.4513 -.7290 -.1672 -.0096 -.2560 -.1958 -.1411  
90.000 -.3495 -.5796 -.0616 .0375 -.2648 -.2550 -.1685  
105.000 -.0149 .0788 -.3244 -.2215  
110.000  
120.000 .0015 .1314 -.3800 -.2233  
135.000 .0092 .1934 -.2924 -.2435  
150.000 -.2574 -.2117 -.0095 .2882 -.3371 -.2772 -.2522  
165.000 -.2065 .0222  
180.000 -.1684 -.1257 .0745 .3442

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8826)

ALPHA ( 5 ) = 11.965 BETA ( 2 ) = .189 MACH = .89857 Q = 599.22 P = 1060.2 RN/L = 3.5673

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | .9323 | .5070 | .3457 | .2286 |       |       | .0774  | .0516  | .0296  | .0535  | .1100  | .1880  | .2138  |       |
| 20.000  | .5195 | .5220 | .5220 | .3364 | .2210 | .1287 |       | .0734  | .0365  | .0078  | -.0044 | .0854  | .1540  | .2420  |       |
| 40.000  | .4410 | .4410 | .4410 | .2445 | .1418 | .0539 |       | -.0260 | -.0921 | -.1239 | -.5258 | -.2438 | -.1885 | -.0907 |       |
| 55.000  | .3704 | .3704 | .3704 | .1824 | .0797 | .0708 |       | -.0191 | -.2135 | -.1239 | -.6465 | -.2421 | -.1854 | -.0762 |       |
| 70.000  | .3273 | .3273 | .3273 | .1508 | .0685 | .0746 |       | -.0051 | -.3423 | -.1239 | -.7346 | -.4318 | -.3004 | -.1332 |       |
| 90.000  | .2392 | .2392 | .2392 | .0968 | .0211 | .1222 |       | .1331  | -.4915 | -.7174 | -.5947 | -.5068 | -.1807 | -.0490 |       |
| 120.000 | .1543 | .1543 | .1543 | .0870 | .0178 | .1393 |       | .4829  | .1633  |        |        |        |        |        |       |
| 140.000 |       |       |       |       |       |       |       |        | .1789  |        |        |        |        |        |       |
| 150.000 |       |       |       |       |       |       |       |        |        |        |        |        |        |        |       |
| 162.000 |       |       |       |       |       |       |       |        |        |        |        |        |        |        |       |
| 165.000 |       |       |       |       |       |       |       |        |        |        |        |        |        |        |       |
| 169.000 |       |       |       |       |       |       |       |        |        |        |        |        |        |        |       |
| 174.000 |       |       |       |       |       |       |       |        |        |        |        |        |        |        |       |
| 180.000 |       |       |       |       |       |       |       |        |        |        |        |        |        |        |       |

| X/LB    | .1024  | .2440  | .1191  | .0716  | .0292  | .1569  | .6050  | .4869  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     | .000   | .1642  | .0794  | -.0577 | -.1509 | -.3117 | -.4470 | -.0527 | -.1195 | -.0975 | -.1268 |
| 40.000  | .2293  | .0931  | .0931  | -.0305 | -.1932 | -.2807 | -.4487 |        |        |        |        |
| 70.000  | -.4609 | -.7480 | -.2285 | -.0855 | -.3158 | -.3165 | -.1852 |        |        |        |        |
| 90.000  | -.3508 | -.5987 | -.1056 | -.0540 | -.3475 | -.3732 | -.1907 |        |        |        |        |
| 105.000 |        |        | -.0308 | .0057  | -.4369 | -.4921 | -.2205 |        |        |        |        |
| 110.000 |        |        |        |        |        |        |        |        |        |        |        |
| 120.000 | -.2812 | -.2951 | -.0085 | .0721  | -.4552 | -.5071 | -.2467 |        |        |        |        |
| 135.000 |        |        | .0179  | .2418  | -.4290 | -.4299 | -.2729 |        |        |        |        |
| 150.000 | -.2076 | -.2150 | .0390  | .3815  | -.3807 | -.4013 | -.2793 |        |        |        |        |
| 165.000 | -.1559 | .0733  | .0733  | .3312  | -.1563 | -.3339 | -.1942 |        |        |        |        |
| 180.000 | -.1483 | -.1192 | .0886  |        |        |        |        |        |        |        |        |

ALPHA ( 5 ) = 11.949 BETA ( 3 ) = 4.257 MACH = .89857 Q = 599.22 P = 1060.2 RN/L = 3.5673

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB   | .0000 | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|--------|-------|-------|-------|-------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI    | .000  | .9179 | .4965 | .3354 | .2166  |        |       | .0760  | .0448  | .0245  | .0457  | .1014  | .1743  | .2099  |       |
| 20.000 | .4638 | .4638 | .4638 | .2379 | .1782  | .1036  |       | .0482  | .0130  | -.0527 | -.1200 | .0359  | .1086  | .2159  |       |
| 40.000 | .3013 | .3013 | .3013 | .1193 | .0300  | -.0350 |       | -.1013 | -.1478 | -.1740 | -.5986 | -.3097 | -.2106 | -.1351 |       |
| 55.000 | .2425 | .2425 | .2425 | .0749 | -.0175 | .0088  |       | -.0805 | -.1740 | -.2801 | -.7229 | -.2068 | -.1968 | -.0821 |       |
| 70.000 | .2187 | .2187 | .2187 | .0608 | -.0197 | .0190  |       | -.0632 | -.4323 | -.6966 | -.3553 | -.2372 | -.0650 |        |       |
| 90.000 | .1740 | .1740 | .1740 | .0523 | -.0266 | .0995  |       | .0770  |        |        |        |        |        |        |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8826)

ALPHA ( 5 ) = 11.949 BETA ( 3 ) = 4.257

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

140.000

150.000

151.000

162.000

165.000

169.000

174.000

180.000

X/LB

1.0895

.6520

.7290

.7790

.8210

.8790

.9210

.9600

.9990

1.0180

1.0460

1.0740

1.1020

1.1300

1.1580

1.1860

1.2140

1.2420

1.2700

1.2980

1.3260

1.3540

1.3820

1.4100

1.4380

1.4660

1.4940

1.5220

1.5500

1.5780

1.6060

1.6340

1.6620

1.6900

1.7180

1.7460

1.7740

1.8020

1.8300

PHI

40.000

70.000

90.000

105.000

110.000

120.000

135.000

150.000

165.000

180.000

PHI

40.000

70.000

90.000

105.000

110.000

120.000

135.000

150.000

165.000

180.000

PHI

40.000

70.000

90.000

105.000

110.000

120.000

135.000

150.000

165.000

180.000

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## REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO  
 LREF = 474.8000 IN. YMRP = .0000 IN. YO  
 BREF = 936.0680 IN. ZMRP = 375.0000 IN. ZO  
 SCALE = .0300

ALPHA ( 1 ) = -3.986 BETA ( 1 ) = -7.853 MACH = .59658 O = 594.56 P = 2386.3 RN/L = 4.8484

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | PHI    | 0.000 | 0.080  | 0.230  | 0.460  | 0.700  | 1.120  | 1.580  | 1.660  | 1.770  | 2.040  | 2.510  | 3.010  | 3.780  | 4.970  | 5.740 |
|---------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| 27.000  | 1.0111 | .1389 | -.2146 | -.2127 | -.2222 | -.2824 | -.2824 | -.2397 | -.1785 | -.1523 | -.1303 | -.0962 | -.0788 | -.0605 | -.0764 |       |
| 40.000  |        |       | -.1945 | -.2282 | -.2819 | -.3101 | -.3101 | -.2063 | -.3302 | -.3302 | -.2724 | -.1941 | -.1667 | -.1474 | -.1465 |       |
| 55.000  |        |       | .0232  | -.2255 | -.2993 | -.1170 | -.1170 | -.1478 | -.1634 | -.1227 | -.1376 | -.0050 | .0610  | .0998  | .0861  |       |
| 70.000  |        |       | .2757  | .0620  | -.0131 | .1527  | .0833  | -.0346 | -.0099 | -.1777 | -.1608 | -.0367 | .0369  | .0055  | .0373  |       |
| 90.000  |        | .7404 | .4512  | .2385  | .1527  | .0833  | .1393  | .1932  | -.1452 | -.1807 | -.1653 | .0055  | .0373  | .0093  |        |       |
| 120.000 |        |       | .5499  | .3377  | .2369  | .1393  | .3228  | .5644  | -.3546 | -.3122 | -.1026 | -.0390 | -.0093 |        |        |       |
| 140.000 |        |       | .6204  | .4629  | .3473  | .3228  |        | .2407  |        |        |        |        |        |        |        |       |
| 150.000 |        |       | .5686  | .4300  | .3484  | .3508  |        | .2551  |        |        |        |        |        |        |        |       |
| 162.000 |        |       |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 165.000 |        |       |        |        |        |        |        | .5725  |        |        |        |        |        |        |        |       |
| 169.000 |        |       |        |        |        |        |        | .7032  |        |        |        |        |        |        |        |       |
| 174.000 | 1.0111 | .7096 | .4373  | .3451  | .2780  | .2905  |        | .3752  |        |        |        |        |        |        |        |       |
| 180.000 | .6520  | .7290 | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |        |       |

X/LB

PHI

|         |        |       |       |       |       |       |       |       |        |        |  |  |  |  |  |  |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--|--|--|--|--|--|
| 27.000  | 1.0111 | .7096 | .4373 | .3451 | .2780 | .2905 |       | .3752 |        |        |  |  |  |  |  |  |
| 40.000  | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |  |  |  |  |  |  |
| 55.000  |        |       |       |       |       |       |       |       |        |        |  |  |  |  |  |  |
| 70.000  |        |       |       |       |       |       |       |       |        |        |  |  |  |  |  |  |
| 90.000  |        |       |       |       |       |       |       |       |        |        |  |  |  |  |  |  |
| 120.000 |        |       |       |       |       |       |       |       |        |        |  |  |  |  |  |  |
| 140.000 |        |       |       |       |       |       |       |       |        |        |  |  |  |  |  |  |
| 150.000 |        |       |       |       |       |       |       |       |        |        |  |  |  |  |  |  |
| 162.000 |        |       |       |       |       |       |       |       |        |        |  |  |  |  |  |  |
| 165.000 |        |       |       |       |       |       |       |       |        |        |  |  |  |  |  |  |
| 169.000 |        |       |       |       |       |       |       |       |        |        |  |  |  |  |  |  |
| 174.000 |        |       |       |       |       |       |       |       |        |        |  |  |  |  |  |  |
| 180.000 |        |       |       |       |       |       |       |       |        |        |  |  |  |  |  |  |

## PARAMETRIC DATA

RUDDER = .000 SPOBRK = .000  
 BOFLAP = .000 L-ELVN = .000  
 R-ELVN = .000 MACH = .600

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(CA148) -140A/B/C/R ORB FUSELAGE

(XE8827)

ALPHA ( 1 ) = -3.969 BETA ( 2 ) = -3.841 MACH = .59658 Q = 594.56 P = 2386.3 RN/L = 4.8484

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| PHI     | 1.0545 | .1761  | -.1747 | -.1845 | -.2057 | -.2420 | -.1654 | -.1370 | -.1118 | -.0827 | -.0589 | -.0472 | -.0684 |       |       |
| 20.000  |        | -.1666 | -.1961 | -.2429 | -.2615 | -.2611 | -.1975 | -.1715 | -.2011 | -.1370 | -.1105 | -.1035 | -.1134 |       |       |
| 40.000  |        | .0119  | -.1897 | -.2615 | -.2611 | -.2611 | -.2963 | -.2664 | -.2011 | -.1370 | -.1105 | -.1035 | -.1134 |       |       |
| 55.000  |        | .2084  | .0029  | .0029  | .0029  | .0029  | -.1859 | -.2023 | -.1795 | -.0422 | .0289  | .0776  |        |       |       |
| 70.000  |        | .3413  | .1347  | .0581  | .0006  | .0006  | -.1123 | -.1935 | -.1795 | -.0422 | .0289  | .0776  |        |       |       |
| 90.000  |        | .6047  | .4312  | .2177  | .1187  | .0409  | -.1049 | -.2709 | -.2182 | -.0766 | .0105  | .0640  |        |       |       |
| 120.000 |        | .5288  | .3715  | .2177  | .1187  | .0409  | .0828  | -.2415 | -.2317 | -.2016 | -.0055 | .0329  |        |       |       |
| 140.000 |        |        |        |        | .2590  | .2340  |        | -.2695 | -.2764 | -.0940 | -.0214 | .0152  |        |       |       |
| 150.000 |        | .5414  | .4159  | .3299  | .3247  |        | .5035  | -.4086 | -.2764 | -.0940 | -.0214 | .0152  |        |       |       |
| 162.000 |        |        |        |        |        |        |        | .1583  |        |        |        |        |        |       |       |
| 165.000 |        |        |        |        |        |        |        | .1940  |        |        |        |        |        |       |       |
| 169.000 |        |        |        |        |        |        |        |        | -.9397 | -.2068 | -.0990 | -.0272 | .0080  |       |       |
| 174.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |       |       |
| 190.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |       |       |
| X/LB    | 1.0545 | .7345  | .4827  | .3812  | .2113  | .3216  | .5969  | -.1576 | -.1999 | -.0976 | -.0358 | .0004  |        |       |       |
|         | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | 1.0180 | 1.0460 |        |        |        |        |       |       |

## PHI

|         |        |        |        |        |        |        |        |        |        |  |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|--|--|--|--|--|
| 40.000  | -.1077 | -.1377 | -.1849 | -.2456 | -.2263 | -.2624 | -.2411 | -.1139 | -.1661 |  |  |  |  |  |  |
| 70.000  | -.1951 | -.1885 | -.2419 | -.2419 | -.2301 | -.2057 | -.2299 | -.1144 | -.1351 |  |  |  |  |  |  |
| 90.000  | -.0054 | -.0403 | .0354  | .1245  | .0128  | .0210  | .0835  |        |        |  |  |  |  |  |  |
| 105.000 | .0259  | .0118  | .0859  | .1615  | .0680  | .0843  | .1244  |        |        |  |  |  |  |  |  |
| 110.000 |        | .1363  | .2289  | .2289  | -.1668 | -.1357 | -.1779 |        |        |  |  |  |  |  |  |
| 120.000 | .0313  | .0738  | .2226  | .3656  | -.2333 | -.1887 | -.1861 | -.2750 | -.1988 |  |  |  |  |  |  |
| 130.000 |        | .2834  | .2834  | .4389  | -.1746 | -.1300 | -.1753 |        |        |  |  |  |  |  |  |
| 150.000 | .0476  | .1105  | .2833  | .4182  | -.1431 | -.1286 | -.1751 |        |        |  |  |  |  |  |  |
| 165.000 | .0416  | .2487  |        |        | .0401  | -.1182 | .1750  |        |        |  |  |  |  |  |  |
| 180.000 | .0231  | .0933  | .2272  | .4290  |        |        |        |        |        |  |  |  |  |  |  |

ALPHA ( 1 ) = -3.949 BETA ( 3 ) = .187 MACH = .59658 Q = 594.56 P = 2386.3 RN/L = 4.8484

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| PHI     | 1.0578 | .1782  | -.1793 | -.1773 | -.2048 | -.2136 | -.1646 | -.1352 | -.1092 | -.0803 | -.0553 | -.0435 | -.0684 |       |       |
| 20.000  |        | -.1649 | -.1877 | -.1877 | -.2269 | -.2136 | -.1817 | -.1537 | -.1579 | -.0982 | -.0760 | -.0715 | -.0815 |       |       |
| 40.000  |        | -.0249 | -.1884 | -.2261 | -.2362 | -.2261 | -.2474 | -.2169 | -.1579 | -.0982 | -.0760 | -.0715 | -.0815 |       |       |
| 55.000  |        | .1209  | .0575  | .0575  | .1100  | .1715  | -.2047 | -.2273 | -.1795 | -.0422 | .0289  | .0776  |        |       |       |
| 70.000  |        | .2235  | .0307  | .0307  | -.0351 | -.0744 | -.1774 | -.2483 | -.2180 | -.0718 | .0022  | .0526  |        |       |       |
| 90.000  |        | .4474  | .3018  | .0923  | .0086  | -.0612 | -.1959 | -.2644 | -.2644 | -.1070 | -.0118 | .0424  |        |       |       |
| 120.000 |        | .4198  | .2525  | .1453  | .1402  |        | -.0533 | -.3508 | -.2864 | -.2463 | -.0404 | .0119  |        |       |       |

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8827)

ALPHA ( 1 ) = -3.949 BETA ( 3 ) = .187

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4270 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4270 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 105.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 110.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 135.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

PHI

40.000

70.000

90.000

105.000

110.000

120.000

135.000

150.000

165.000

180.000

ALPHA ( 1 ) = -3.957 BETA ( 4 ) = 4.268 MACH = .59658 Q = 594.56 P = 2366.3 RN/L = 4.6484

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4270 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 20.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 55.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

.6128

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(XE8827)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 1 ) = -3.957 BETA ( 4 ) = 4.268

SECTION ( 1 ) ORBITTER FUSELAGE DEPENDENT VARIABLE CP

|         |        |        |        |        |        |        |        |        |        |         |        |         |         |         |       |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|---------|---------|---------|-------|
| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040   | .2510  | .3010   | .3780   | .4970   | .5740 |
| PHI     |        |        |        |        |        |        |        | .4853  |        | -1.1288 | -2.004 | -0.0996 | -0.0368 | -0.0016 |       |
| 180.000 | 1.0376 | .6940  | .4823  | .3785  | .3057  | .3181  |        |        |        |         |        |         |         |         |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460  |        |         |         |         |       |
| PHI     |        |        |        |        |        |        |        |        |        |         |        |         |         |         |       |
| .000    | -.1177 | -.1429 | -.1826 | -.2422 | -.2304 | -.2624 | -.2405 |        | -.1174 | -.1634  |        |         |         |         |       |
| 40.000  | -.1389 | -.1738 | -.2297 | -.2242 | -.1975 | -.1986 |        |        | -.1172 | -.1527  |        |         |         |         |       |
| 70.000  | -.0491 | -.0929 | -.0456 | .0375  | .0977  | .0802  | -.1081 |        |        |         |        |         |         |         |       |
| 90.000  | -.0176 | -.0441 | .0055  | .0298  | .1707  | .1522  | -.1551 |        |        |         |        |         |         |         |       |
| 105.000 |        |        | .0345  | .0387  | .3073  | -.2126 | -.2117 |        |        |         |        |         |         |         |       |
| 110.000 |        |        |        |        |        |        |        | -.2829 |        |         |        |         |         |         |       |
| 120.000 | -.0209 | -.0193 | .0639  | .0852  | .4594  | -.3547 | -.3075 | -.2473 |        |         |        |         |         |         |       |
| 135.000 |        |        | .1655  | .3071  | -.3762 | -.2708 | -.2613 |        |        |         |        |         |         |         |       |
| 150.000 | .0155  | .0556  | .1960  | .4702  | -.3158 | -.2906 | -.2548 |        |        |         |        |         |         |         |       |
| 165.000 | .6223  | .2032  |        |        | -.1717 | -.2835 | -.1780 |        |        |         |        |         |         |         |       |
| 180.000 | .0213  | .0909  | .2317  | .4614  |        |        |        |        |        |         |        |         |         |         |       |

ALPHA ( 1 ) = -3.972 BETA ( 5 ) = 8.340 MACH = .59658 Q = 594.56 P = 2386.3 RV/L = 4.8484

SECTION ( 1 ) ORBITTER FUSELAGE

DEPENDENT VARIABLE CP

|         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
| PHI     |        |        |        |        |        |        |        | -.1772 |        | -.1601 | -.1322 | -.1007 | -.0771 | -.0655 | -.0834 |
| .000    | .9915  | .1353  | -.2002 | -.1949 | -.2296 | -.2029 |        | -.1746 | -.1597 | -.1784 | -.1147 | -.0595 | -.0383 | -.0436 | -.0399 |
| 20.000  |        |        | -.2018 | -.1913 | -.2338 | -.1942 |        | -.1905 | -.1784 | -.1147 | -.0595 | -.0383 | -.0436 | -.0399 |        |
| 40.000  |        |        | -.1281 | -.2134 | -.2255 | -.1942 |        | -.2361 | -.2555 | -.2500 | -.1002 | -.0193 | -.0269 |        |        |
| 55.000  |        |        | -.0564 | -.1694 | .1917  | .2071  |        | -.2710 | -.3207 | -.3223 | -.1388 | -.0345 | .0142  |        |        |
| 70.000  |        |        | -.0058 | -.1539 | .1887  | .1872  |        | -.3436 | -.4944 | -.5510 | -.3522 | -.1261 | -.0629 |        |        |
| 90.000  | .1020  |        | .0431  | .1428  | .1931  | -.2280 |        | -.3405 | -.5219 | -.6332 | -.2695 | -.1509 | -.1021 | -.0720 |        |
| 120.000 |        |        | .1547  | -.0022 | -.1152 | -.1046 |        |        | -.5219 | -.6332 | -.2695 | -.1509 | -.1021 | -.0720 |        |
| 140.000 |        |        | .2902  | .3208  | .1124  | .1059  |        |        | -.2632 | -.1661 |        |        |        |        |        |
| 150.000 |        |        |        |        |        |        |        |        | -.9912 | -.2430 | -.1516 | -.0926 | -.0611 |        |        |
| 162.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 165.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 174.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 180.000 | .9915  | .6248  | .4361  | .3300  | .2627  | .2773  | .5452  |        |        |        |        |        |        |        |        |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |        |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| .000    | -.1242 | -.1497 | -.1881 | -.2443 | -.2272 | -.2684 | -.2447 |        | -.1169 | -.1620 |        |        |        |        |        |
| 40.000  | -.1250 |        | -.1660 | -.2235 | -.2193 | -.2020 | -.1904 |        | -.1146 | -.1501 |        |        |        |        |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB827)

ALPHA ( 1 ) = -3.972 BETA ( 5 ) = 8.340

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| 70.000  | -.0682 | -.1165 | -.0834 | .0007  | -.1359 | -.1023 | -.1192 |        |        |        |
| 90.000  | -.0414 | -.0824 | -.0538 | -.0171 | -.2114 | -.1784 | -.1693 |        |        |        |
| 105.000 |        |        | -.0180 | .0047  | -.3461 | -.2354 | -.2197 |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.2761 |        |        |
| 120.000 | -.0574 | -.0754 | -.0261 | -.1173 | -.5941 | -.4379 | -.3569 | -.2685 |        |        |
| 135.000 |        |        | .0665  | .1399  | -.5085 | -.3549 | -.3161 |        |        |        |
| 150.000 | -.0404 | -.0176 | .0965  | .4242  | -.4715 | -.4083 | -.3030 |        |        |        |
| 165.000 | -.0376 | .1163  |        | -.2881 | -.3770 | -.1938 |        |        |        |        |
| 180.000 | -.0306 | .0297  | .1681  | .3583  |        |        |        |        |        |        |

ALPHA ( 2 ) = .056 BETA ( 1 ) = -7.886 MACH = .59638 Q = 594.21 P = 2386.5 RN/L = 4.8456

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580 | .1660  | .1770 | .2040    | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|--------|--------|--------|--------|-------|--------|-------|----------|--------|--------|--------|--------|--------|
| PHI     |        |       |        |        |        |        |       |        |       |          |        |        |        |        |        |
| 70.000  | 1.0372 | .3192 | -.0710 | -.1168 | -.1382 | -.2001 |       | -.1428 |       | -.1225   | -.1042 | -.0738 | -.0502 | -.0247 | -.0280 |
| 90.000  |        |       | -.0248 | -.0991 | -.1732 | -.1644 |       | -.1746 |       | -.1599   |        |        |        |        |        |
| 105.000 |        |       | .2021  | -.0414 | -.1358 | -.1644 |       | -.2274 |       | -.2085   | -.1478 | -.0957 | -.0754 | -.0700 | -.0559 |
| 120.000 |        |       | .4018  | .1914  | .1087  | .0175  |       | -.0931 |       | -.0931   |        |        |        |        |        |
| 135.000 |        |       | .4999  | .2924  | .2005  | .1306  |       | -.0004 |       | -.0963   | -.1343 | -.0225 | .0256  | .0509  |        |
| 150.000 |        | .7359 | .5504  | .3480  | .2338  | .1622  |       | .0182  |       | -.1571   | -.1637 | -.0348 | .0073  | .0382  |        |
| 165.000 |        |       | .5485  | .3966  | .2870  | .2816  |       | .1689  |       | -.1746   | -.2254 | -.2178 | -.0693 | -.0527 |        |
| 174.000 |        |       | .4487  | .3213  | .2460  | .2600  |       | .5122  |       | -.2697   | -.4005 | -.1560 | -.0833 | -.0592 |        |
| 180.000 |        |       |        |        |        |        |       |        | .1851 |          |        |        |        |        |        |
| 151.000 |        |       |        |        |        |        |       |        | .1718 |          |        |        |        |        |        |
| 162.000 |        |       |        |        |        |        |       |        |       | -.1.1262 | -.2984 | -.1665 | -.0917 | -.0840 |        |
| 165.000 |        |       |        |        |        |        |       | .5098  |       |          |        |        |        |        |        |
| 169.000 |        |       |        |        |        |        |       | .6539  |       |          |        |        |        |        |        |
| 174.000 |        |       |        |        |        |        |       | .2982  |       |          |        |        |        |        |        |
| 180.000 | 1.0372 | .5788 | .3215  | .2439  | .1876  | .2081  |       |        |       | -.1.3568 | -.2728 | -.1579 | -.0969 | -.0671 |        |

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

## PHI

|         |        |        |        |        |        |        |        |        |        |        |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|--|--|--|--|
| 70.000  | -.0606 | -.0951 | -.1406 | -.2105 | -.2072 | -.2511 | -.2372 |        |        |        |  |  |  |  |  |
| 90.000  | -.1135 |        | -.1437 | -.2056 | -.2021 | -.1945 | -.2213 |        | -.1092 | -.1695 |  |  |  |  |  |
| 105.000 | -.0873 | -.0770 | .0305  | .1735  | .0361  | .0268  | -.0448 |        | -.1054 | -.1266 |  |  |  |  |  |
| 120.000 | -.0430 | -.0257 | .0861  | .2181  | -.0063 | -.0395 | -.0598 |        |        |        |  |  |  |  |  |
| 135.000 |        |        | .1314  | .3417  | -.0807 | -.0838 | -.1519 |        |        |        |  |  |  |  |  |
| 150.000 |        |        | .1921  | .4956  | -.1641 | -.1269 | -.1386 | -.2571 |        |        |  |  |  |  |  |
| 165.000 |        |        | .2339  | .4242  | -.1622 | -.1123 | -.1660 | -.1879 |        |        |  |  |  |  |  |
| 180.000 | -.0421 | .0305  | .2192  | .2422  | -.1791 | -.1111 | -.1609 |        |        |        |  |  |  |  |  |

(XE8827)

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 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

| ALPHA ( 2 ) = .055 BETA ( 1 ) = -7.885               |        | DEPENDENT VARIABLE CP |        | Q = 594.21 P = 2386.5 RV/L = 4.8456 |        |
|--|--------|-----------------------|--------|-------------------------------------|--------|
| SECTION ( 1 ) ORBITER FUSELAGE                       |        | DEPENDENT VARIABLE CP |        |                                     |        |
| X/LB   |        |                       |        |                                     |        |
| PHI  |        |                       |        |                                     |        |
| 165.000  | .0487  | .1750                 | .0942  | -.0576                              | -.1827 |
| 180.000  | -.0601 | .1356                 | .2585  |                                     |        |
| ALPHA ( 2 ) = .065 BETA ( 2 ) = -3.863 MACH = .59638 |        | DEPENDENT VARIABLE CP |        | Q = 594.21 P = 2386.5 RV/L = 4.8456 |        |
| SECTION ( 1 ) ORBITER FUSELAGE                       |        | DEPENDENT VARIABLE CP |        |                                     |        |
| X/LB   |        |                       |        |                                     |        |
| PHI  |        |                       |        |                                     |        |
| .000   | 1.0750 | .3594                 | -.0292 | -.0805                              | -.1181 |
| 20.000   |        |                       | -.0052 | -.0806                              | -.1436 |
| 40.000   |        |                       | .1742  | -.0391                              | -.1140 |
| 55.000   |        |                       | .3169  | .1199                               | .0459  |
| 70.000   |        |                       | .3857  | .1891                               | .1013  |
| 90.000   | .6060  |                       | .4377  | .2383                               | .1359  |
| 120.000  |        |                       | .4697  | .3180                               | .2130  |
| 140.000  |        |                       | .4284  | .3111                               | .2362  |
| 150.000  |        |                       |        |                                     | .2524  |
| 162.000  |        |                       |        |                                     |        |
| 165.000  |        |                       |        |                                     |        |
| 174.000  |        |                       |        |                                     |        |
| 180.000  |        |                       |        |                                     |        |
| PHI  |        |                       |        |                                     |        |
| .000   | 1.0750 | .3555                 | .2798  | .2137                               | .2376  |
| 20.000   |        |                       |        |                                     |        |
| 40.000   |        |                       |        |                                     |        |
| 55.000   |        |                       |        |                                     |        |
| 70.000   |        |                       |        |                                     |        |
| 90.000   |        |                       |        |                                     |        |
| 120.000  |        |                       |        |                                     |        |
| 140.000  |        |                       |        |                                     |        |
| 150.000  |        |                       |        |                                     |        |
| 162.000  |        |                       |        |                                     |        |
| 165.000  |        |                       |        |                                     |        |
| 174.000  |        |                       |        |                                     |        |
| 180.000  |        |                       |        |                                     |        |
| X/LB   |        |                       |        |                                     |        |
| .000   | 1.0750 | .5960                 | .3555  | .2798                               | .2137  |
| 20.000   |        |                       |        |                                     |        |
| 40.000   |        |                       |        |                                     |        |
| 55.000   |        |                       |        |                                     |        |
| 70.000   |        |                       |        |                                     |        |
| 90.000   |        |                       |        |                                     |        |
| 120.000  |        |                       |        |                                     |        |
| 140.000  |        |                       |        |                                     |        |
| 150.000  |        |                       |        |                                     |        |
| 162.000  |        |                       |        |                                     |        |
| 165.000  |        |                       |        |                                     |        |
| 174.000  |        |                       |        |                                     |        |
| 180.000  |        |                       |        |                                     |        |
| PHI  |        |                       |        |                                     |        |
| .000   | 1.0750 | .5960                 | .3555  | .2798                               | .2137  |
| 20.000   |        |                       |        |                                     |        |
| 40.000   |        |                       |        |                                     |        |
| 55.000   |        |                       |        |                                     |        |
| 70.000   |        |                       |        |                                     |        |
| 90.000   |        |                       |        |                                     |        |
| 120.000  |        |                       |        |                                     |        |
| 140.000  |        |                       |        |                                     |        |
| 150.000  |        |                       |        |                                     |        |
| 162.000  |        |                       |        |                                     |        |
| 165.000  |        |                       |        |                                     |        |
| 174.000  |        |                       |        |                                     |        |
| 180.000  |        |                       |        |                                     |        |





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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB827)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = .060 BETA ( 5 ) = 8.305

SECTION 11 ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

180.000 1.0091 .4938 .3191 .2260 .1663 .1939 3238 -1.3093 -.2755 -.1545 -.1037 -.0746

X/LB

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 -0.0554 -0.0967 -0.1370 -0.2154 -0.2087 -0.2522 -0.2409 -0.1103 -0.1596

40.000

-0.0550 -0.1261 -0.1925 -0.2048 -0.1955 -0.1793 -0.1061 -0.1525

70.000

-0.1548 -0.1948 -0.1218 -0.0277 -0.1482 -0.1099 -0.1246

90.000

-0.1022 -0.1275 -0.0742 -0.0273 -0.2296 -0.1997 -0.1873

105.000

-0.0345 -0.0348 -0.3499 -0.2473 -0.2313

120.000

-0.0764 -0.0856 -0.0171 -0.1257 -0.5614 -0.4117 -0.3228 -0.2878

135.000

-0.0593 -0.0305 .0669 .1231 -0.5161 -0.3580 -0.3088 -0.2531

150.000

-0.0629 -0.0930 .0964 .3665 -0.5072 -0.4181 -0.3120

165.000

-0.0599 -0.0051 .1378 .2983 -0.3699 -0.3982 -0.1786

180.000

-0.0599 -0.0051 .1378 .2983

ALPHA ( 3 ) = 3.257 BETA ( 1 ) = -7.687 MACH = .59603 Q = 593.49 P = 2386.0 RN/L = 4.8432

SECTION 11 ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.0251 .4922 .0789 -0.0035 -0.0555 -0.0923 -0.0779 -0.0670 -0.0406 -0.0150 .0143 .0233

20.000

.1440 .0206 -0.0558 -0.1058 -0.1057 -0.0930 -0.0945 -0.0502 -0.0036 .0055 .0074 .0340

40.000

.3551 .1135 .0180 -0.0241 -0.0916 -0.0407 -0.0817 -0.1437 -0.0455 -0.0079 .0021

60.000

.4877 .2894 .1939 .1060 .0260 .0241 -0.0813 -0.1745 -0.0813 -0.0336 -0.0127

80.000

.5254 .3265 .2280 .1564 .0364 -0.2224 -0.3037 -0.1728 -0.1716

100.000

.5205 .3356 .2404 .1731 .1479 -0.3347 -0.4870 -0.2076 .1271 -0.1098

120.000

.4574 .3108 .2082 .2127 .4646 .1274 .0899 -1.2789 -0.3463 -0.1967 -0.1213 -0.0962

140.000

.3270 .2020 .1413 .1807 .4510 .0899 -1.2789 -0.3463 -0.1967 -0.1213 -0.0962

160.000

.1500 .0206 -0.0558 -0.1058 -0.0916 -0.0407 -0.0817 -0.1437 -0.0455 -0.0079 .0021

180.000

.1500 .0206 -0.0558 -0.1058 -0.0916 -0.0407 -0.0817 -0.1437 -0.0455 -0.0079 .0021

PHI

.000 1.0251 .4922 .0789 -0.0035 -0.0555 -0.0923 -0.0779 -0.0670 -0.0406 -0.0150 .0143 .0233

20.000

.1440 .0206 -0.0558 -0.1058 -0.1057 -0.0930 -0.0945 -0.0502 -0.0036 .0055 .0074 .0340

40.000

.3551 .1135 .0180 -0.0241 -0.0916 -0.0407 -0.0817 -0.1437 -0.0455 -0.0079 .0021

60.000

.4877 .2894 .1939 .1060 .0260 .0241 -0.0813 -0.1745 -0.0813 -0.0336 -0.0127

80.000

.5254 .3265 .2280 .1564 .0364 -0.2224 -0.3037 -0.1728 -0.1716

100.000

.5205 .3356 .2404 .1731 .1479 -0.3347 -0.4870 -0.2076 .1271 -0.1098

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE6827)

ALPHA ( 3 ) = 3.957 BETA ( 1 ) = -7.887

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

70.000 -.2034 -.1457 -.0057 .1675 .0428 .0401 -.0412  
 90.000 -.1426 -.0907 .0526 .2218 .0044 .0323 -.0967  
 105.000 .105.000 .0901 .3709 -.0633 -.0786 -.1446  
 110.000  
 120.000 -.2059 -.0876 .1310 .5166 -.1925 -.1435 -.1368  
 135.000 .1795 .3739 -.2103 -.1419 -.1869  
 150.000 -.1017 -.0225 .1840 .1130 -.2384 -.1380 -.1756  
 165.000 -.0929 .1431 .0705 -.0760 -.1883  
 180.000 -.0873 -.0147 .1125 .2026

-2451  
-1954

ALPHA ( 3 ) = 3.961 BETA ( 2 ) = -3.863 MACH = .59508 Q = 593.49 P = 2386.0 RN/L = 4.8432

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0220 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.0634 .5278 .1193 .0260 -.0283 -.0797  
 20.000 .1596 .0440 -.0450  
 40.000 .3109 .0994 .0106 -.0256  
 55.000 .3930 .2114 .1298 .0450  
 70.000 .4136 .2243 .1262 .0753  
 90.000 .5694 .4196 .2351 .1357 .0858  
 120.000 .3875 .2465 .1565 .1737  
 140.000 .3092 .2033 .1400 .1747  
 150.000  
 160.000  
 165.000  
 169.000  
 174.000  
 180.000 1.0634 .4433 .2275 .1766 .1214 .1644 .5893 .3277 .9990 1.0180 1.0460

-.0723 -.0659 -.0491 -.0263 -.0003 .0307 .0314  
 -.0818 -.0785 -.0871 -.0431 -.0022 .0139 .0202 .0518  
 -.0349 -.1013 -.1505 -.1913 -.0896 -.0445 -.0247  
 -.0442 -.2265 -.2184 -.1185 -.0528 -.0333  
 -.0425 -.2873 -.3054 -.2825 -.1218 -.1094  
 -.4011 -.4134 -.1739 -.0872 -.0670  
 .0490  
 .0407 -1.2574 -.3044 -.1593 -.0812 -.0563  
 -1.4632 -.2699 -.1443 -.0743 -.0513

X/LB

PHI

.000 .0118 -.0313 -.0909 -.1672 -.1821 -.2337 -.2264  
 40.000 -.0029 -.0029 -.0751 -.1547 -.1819 -.1672 -.2126  
 70.000 .2357 -.1926 .0551 .1136 .0104 -.0038 -.0654  
 90.000 .1659 -.1228 .0141 .1487 .0601 -.0761 -.1174  
 120.000 .0632 .2501 .1446 -.1288 -.1734  
 135.000  
 150.000 .1442 -.0305 .1622 .3393 -.2425 -.1888 -.1727  
 160.000 .2158 .3097 .2496 -.1749 -.1963  
 174.000 .0580 .0242 .2147 .2075 -.2551 -.1777 -.1851

-1.027 -1.565  
-1.1044 -1.1242-2529  
-1879



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8827)

|               |       |              |       |      |   |        |   |   |        |   |   |        |      |   |        |
|---------------|-------|--------------|-------|------|---|--------|---|---|--------|---|---|--------|------|---|--------|
| ALPHA ( 3 ) = | 3.978 | BETA ( 4 ) = | 4.237 | MACH | = | .59508 | Q | = | 593.49 | P | = | 2386.0 | RN/L | = | 4.6432 |
|---------------|-------|--------------|-------|------|---|--------|---|---|--------|---|---|--------|------|---|--------|

## SECTION ( ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .023C | .0460 | .0700  | .1120  | .1580 | .1660  | .1770  | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|--------|---------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |        |        |       |        |        |         |        |        |        |        |       |
| .000    | 1.0520 | .5147 | .1037 | .0240 | -.0387 |        |       | -.0713 |        | -.0681  | -.0534 | -.0248 | .0046  | .0340  | .0304 |
| 20.000  |        |       | .1013 | .0142 | -.0581 | -.0779 |       | -.0849 |        | -.0835  |        |        |        |        |       |
| 40.000  |        |       | .1537 | .0197 | -.0485 | -.0653 |       | -.0968 |        | -.1161  | -.0812 | -.0260 | -.0002 | .0118  | .0553 |
| 55.000  |        |       | .1698 | .0243 | -.0294 | -.0806 |       | -.1470 |        | .1930   |        |        |        |        |       |
| 70.000  |        |       | .1679 | .0159 | -.0485 | -.0651 |       | .1716  |        | -.2634  | -.2563 | -.1343 | -.0737 | -.0439 |       |
| 90.000  |        | .2536 | .1890 | .0221 | -.0426 | -.0730 |       | .1923  |        | -.3657  | -.2822 | -.1491 | -.0556 | -.0428 |       |
| 120.000 |        |       | .2185 | .0844 | -.0029 | .0356  |       | -.1277 |        | -.4417  | -.3396 | -.2460 | -.0629 | -.0428 |       |
| 140.000 |        |       |       |       |        |        |       |        |        | -.5191  |        |        |        |        |       |
| 150.000 |        |       | .2258 | .1531 | .0758  | .1061  |       | .2285  |        | -.6821  | -.3268 | -.1467 | -.0625 | -.0373 |       |
| 151.000 |        |       |       |       |        |        |       |        | -.1735 |         |        |        |        |        |       |
| 162.000 |        |       |       |       |        |        |       |        | -.1463 |         |        |        |        |        |       |
| 165.000 |        |       |       |       |        |        |       | .3519  |        | -1.1979 | -.2682 | -.1427 | -.0620 | -.0373 |       |
| 169.000 |        |       |       |       |        |        |       |        |        |         |        |        |        |        |       |
| 174.000 |        |       |       |       |        |        |       |        |        |         |        |        |        |        |       |
| 180.000 | 1.0520 | .4151 | .2505 | .1737 | .1274  | .1664  | .5143 | .3569  |        | -1.4134 | -.2618 | -.1422 | -.0692 | -.0506 |       |

|      |       |       |       |       |       |       |       |       |        |        |
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| X/LB | .6520 | .729C | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|

143

[illegible]
$$\begin{aligned} \text{ALPHA} (3) &= 3.980 & \text{BETA} (5) &= 8.292 & \text{MACH} &= .59508 & Q &= .59349 & P &= 2386.0 & \text{RN/L} &= 4.8432 \end{aligned}$$

SECTION ( ) CPBITER FUSELAGE

## DEPENDENT VARIABLE CP

[illegible]

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-07310A148) -140A/B/C/R ORB FUSELAGE

(XEBB27)

ALPHA ( 3 ) = 3.900 BETA ( 5 ) = 8.292

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

140.000  
150.000  
151.000  
162.000  
165.000  
169.000  
174.000  
180.000

1.0015 .3551 .2086 .1199 .0793 .1255 .4508 .2624 .9990 1.0180 1.0460

-.0026 -.0394 -.0951 -.1740 -.1868 -.2344 -.2305  
-.0739 -.1440 -.1898 -.1749 -.1683  
-.2592 -.1624 -.0427 .1517 .1208 .1317  
-.1191 -.1182 .1004 -.0533 -.2323 .1933 .1752  
-.0482 -.0427 .13423 .2486 .2262  
-.1006 -.1041 -.0030 -.0519 .5082 .3779 .3031  
-.0725 .0370 .0370 .2744 .5170 .4173 .3031  
-.0725 .0882 .1164 .2365

X/LB

PHI

140.000  
150.000  
151.000  
162.000  
165.000  
169.000  
174.000  
180.000

1.0015 .3551 .2086 .1199 .0793 .1255 .4508 .2624 .9990 1.0180 1.0460

-.0026 -.0394 -.0951 -.1740 -.1868 -.2344 -.2305  
-.0739 -.1440 -.1898 -.1749 -.1683  
-.2592 -.1624 -.0427 .1517 .1208 .1317  
-.1191 -.1182 .1004 -.0533 -.2323 .1933 .1752  
-.0482 -.0427 .13423 .2486 .2262  
-.1006 -.1041 -.0030 -.0519 .5082 .3779 .3031  
-.0725 .0370 .0370 .2744 .5170 .4173 .3031  
-.0725 .0882 .1164 .2365

ALPHA ( 4 ) = 7.995 BETA ( 1 ) = -7.895 MACH = .59500

P = 2386.0 RN/L = 4.8429

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

140.000  
150.000  
151.000  
162.000  
165.000  
169.000  
174.000  
180.000

1.0015 .3551 .2086 .1199 .0793 .1255 .4508 .2624 .9990 1.0180 1.0460

-.0026 -.0394 -.0951 -.1740 -.1868 -.2344 -.2305  
-.0739 -.1440 -.1898 -.1749 -.1683  
-.2592 -.1624 -.0427 .1517 .1208 .1317  
-.1191 -.1182 .1004 -.0533 -.2323 .1933 .1752  
-.0482 -.0427 .13423 .2486 .2262  
-.1006 -.1041 -.0030 -.0519 .5082 .3779 .3031  
-.0725 .0370 .0370 .2744 .5170 .4173 .3031  
-.0725 .0882 .1164 .2365

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XE8827)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 7.936 BETA ( 1 ) = -7.885

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |         |        |        |        |        |       |
| 180.000 | .9905  | .2789  | .0716  | .0486  | .0096  | .0645  |        | .1717  |        | -1.6448 | -.3129 | -.1782 | -.1155 | -.1056 |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460  |        |        |        |        |       |
| PHI     |        |        |        |        |        |        |        |        |        |         |        |        |        |        |       |
| .000    | .0634  | .0248  | -.0392 | -.1196 | -.1418 | -.2116 | -.2135 |        | -.0896 | -.1534  |        |        |        |        |       |
| 40.000  | .0874  | -.0137 | -.0987 | -.1504 | -.1231 | -.1958 |        |        | -.0872 | -.1192  |        |        |        |        |       |
| 70.000  | -.3051 | -.2103 | -.0361 | .1680  | .0512  | .0452  | -.0302 |        |        |         |        |        |        |        |       |
| 90.000  | -.2461 | -.1491 | .0219  | .2233  | .0201  | -.0281 | -.0934 |        |        |         |        |        |        |        |       |
| 105.000 |        | .0538  | .0538  | .3039  | -.0493 | -.0724 | -.1489 |        |        |         |        |        |        |        |       |
| 110.000 |        |        |        |        |        |        |        | -.2454 |        |         |        |        |        |        |       |
| 120.000 | -.3407 | -.1755 | .0616  | .5394  | -.2224 | -.1667 | -.1521 |        |        |         |        |        |        |        |       |
| 135.000 |        |        | .1328  | .3422  | -.2567 | -.1786 | -.2106 |        |        |         |        |        |        |        |       |
| 150.000 | -.1465 | -.0531 | .1470  | -.0707 | -.3025 | -.1634 | -.1858 |        |        |         |        |        |        |        |       |
| 165.000 | -.1145 |        | .1233  |        | .0632  | -.0821 | -.1932 |        |        |         |        |        |        |        |       |
| 180.000 | -.1122 | -.0294 | .1038  | .1266  |        |        |        |        |        |         |        |        |        |        |       |

ALPHA ( 4 ) = 7.944 BETA ( 2 ) = -3.857 MACH = .59590 Q = 593.13 P = 2386.0 RV/L = 4.8429

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040    | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|--------|--------|--------|--------|--------|--------|--------|----------|--------|--------|--------|--------|-------|
| PHI     |        |       |        |        |        |        |        |        |        |          |        |        |        |        |       |
| .000    | 1.3256 | .6783 | .2554  | .1393  | .0655  |        |        | -.0108 |        | -.0131   | -.0056 | .0199  | .0464  | .0828  | .0937 |
| 20.000  |        |       | .3054  | .1637  | .0645  | .0096  |        | -.0135 |        | -.0176   |        |        |        |        |       |
| 40.000  |        |       | .4236  | .2206  | .1282  | .0715  |        | -.0126 |        | -.0145   | .0071  | .0512  | .0693  | .0811  | .1267 |
| 55.000  |        |       | .4413  | .2614  | .1733  | .0817  |        | -.0125 |        | -.0855   |        |        |        |        |       |
| 70.000  |        |       | .4062  | .2336  | .1399  | .0852  |        | -.0317 |        | -.1454   | -.2179 | -.1208 | -.0832 | -.0734 |       |
| 90.000  | .5041  |       | .3764  | .2108  | .1375  | .0805  |        | -.0391 |        | -.2282   | -.2392 | -.1454 | -.1056 | -.0807 |       |
| 120.000 |        |       | .2916  | .1601  | .0768  | .1104  |        | .0431  |        | -.3320   | -.3635 | -.3640 | -.2283 | -.2190 |       |
| 140.000 |        |       |        |        |        |        |        |        |        | -.4652   |        |        |        |        |       |
| 150.000 |        |       | .1866  | .1015  | .0475  | .1006  |        | .3778  |        | -.7000   | -.4781 | -.2064 | -.1187 | -.1019 |       |
| 162.000 |        |       |        |        |        |        |        |        | -.0001 |          |        |        |        |        |       |
| 165.000 |        |       |        |        |        |        |        |        | -.0336 |          |        |        |        |        |       |
| 169.000 |        |       |        |        |        |        |        |        |        | -.1.3989 | -.3354 | -.1801 | -.1025 | -.0817 |       |
| 174.000 |        |       |        |        |        |        |        |        |        |          |        |        |        |        |       |
| 180.000 | 1.0256 | .2833 | .1100  | .0838  | .0391  | .0965  |        | .3886  |        |          |        |        |        |        |       |
| X/LB    | .6520  | .7230 | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460   |        |        |        |        |       |
| PHI     |        |       |        |        |        |        |        |        |        |          |        |        |        |        |       |
| .000    | .0793  | .0312 | -.0355 | -.1178 | -.1411 | -.2028 | -.2093 |        | -.0891 | -.1460   |        |        |        |        |       |
| 40.000  | .0889  |       | -.0105 | -.0974 | -.1519 | -.1294 | -.1923 |        | -.0806 | -.1125   |        |        |        |        |       |

AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

(L2883X)

ALPHA ( 4 ) = 7.944 BETA ( 2 ) = -3.857

## SECTION ( ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

|         | X/LB | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0450 |
|---------|------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |      |        |        |        |       |        |        |        |        |        |        |
| 70.000  |      | -.3468 | -.2528 | -.0903 | .1089 | -.0044 | .0080  | -.0480 |        |        |        |
| 90.000  |      | -.2609 | -.1919 | -.0254 | .1498 | -.0460 | -.0670 | -.1093 |        |        |        |
| 105.000 |      |        |        | .0261  | .2669 | -.1252 | -.1167 | -.1657 |        |        |        |
| 110.000 |      |        |        |        |       |        |        |        |        |        |        |
| 120.000 |      | -.2433 | -.0927 | .1547  | .2043 | .2655  | -.1897 | -.1635 | -.2378 |        |        |
| 135.000 |      |        |        | .1950  | .1569 | -.2750 | .1932  | -.2080 | -.1849 |        |        |
| 150.000 |      | -.1024 | .0004  | .1956  | .1211 | -.2699 | -.1877 | -.1808 |        |        |        |
| 165.000 |      | -.0855 | .1494  | .1494  |       | -.0587 | -.1544 | -.1653 |        |        |        |
| 180.000 |      | -.0755 | .0089  | .1402  | .2682 |        |        |        |        |        |        |

ALPHA ( 4 ) = 9.045      BETA ( 3 ) = .182      MACH = .59590      Q = 593.13      P = 2386.0      RN/L = 4.8429

## SECTION : 11 CPBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/L5    | .0020  | .0060 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660  | .1770  | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|--------|--------|---------|--------|--------|--------|--------|-------|
| PA1     |        |       |       |       |       |       |       |        |        |         |        |        |        |        |       |
| 20.000  | 1.0333 | .6870 | .2625 | .1413 | .0676 | .0087 |       | -.0079 |        | -.0088  | .0002  | .0197  | .0527  | .0880  | .0963 |
| 40.000  |        |       | .2850 | .1517 | .0614 |       |       | -.0151 |        | -.0207  |        |        |        |        |       |
| 60.000  |        |       | .3429 | .1698 | .0857 | .0336 |       | -.0115 |        | -.0482  | -.0309 | .0217  | .0455  | .0615  | .1237 |
| 80.000  |        |       | .3223 | .1510 | .0761 | .0037 |       | -.0842 |        | -.1514  |        |        |        |        |       |
| 100.000 |        |       | .2858 | .1219 | .0397 | .0049 |       | -.1016 |        | -.2052  | -.2571 | -.1533 | -.1097 | -.0894 |       |
| 120.000 |        | .3583 | .2673 | .1121 | .0451 | .0033 |       | -.1142 |        | -.2950  | -.2752 | -.1698 | -.1104 | -.0905 |       |
| 140.000 |        |       | .2317 | .1014 | .0354 | .0049 |       | -.0312 |        | -.3047  | -.3601 | -.3131 | -.1529 | -.1368 |       |
| 160.000 |        |       |       |       |       |       |       |        |        | -.5216  |        |        |        |        |       |
| 180.000 |        |       | .1702 | .0950 | .0373 | .0872 |       | .2984  |        | -.7263  | -.4113 | -.1693 | -.0842 | -.0679 |       |
| 200.000 |        |       |       |       |       |       |       |        | -.0916 |         |        |        |        |        |       |
| 220.000 |        |       |       |       |       |       |       |        | -.1071 |         |        |        |        |        |       |
| 240.000 |        |       |       |       |       |       |       |        |        | -1.3465 | -.3024 | -.1553 | -.0732 | -.0553 |       |
| 260.000 |        |       |       |       |       |       |       | .3538  |        |         |        |        |        |        |       |
| 280.000 |        |       |       |       |       |       | .5147 |        |        |         |        |        |        |        |       |
| 300.000 |        |       |       | .0838 | .0499 | .1067 |       |        |        |         |        |        |        |        |       |
| 320.000 | 1.0333 | .2860 | .1328 |       |       |       |       | .3121  |        | -1.5493 | -.2743 | -.1398 | -.0585 | -.0525 |       |

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (XE8827)

ALPHA ( 4 ) = 8.045 BETA ( 3 ) = .182

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

## PHI

165.000 -.0667 .1349 -.1548 -.2478 -.1536  
180.000 -.0607 .1498 .4163

ALPHA ( 4 ) = 8.043 BETA ( 4 ) = 4.239 MACH = .59590 Q = 593.13 P = 2386.0 RN/L = 4.6429

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

## PHI

.000 1.0134 .6636 .2503 .1362 .0555 -.0135 -.0183  
20.000 .2353 .1183 .0343 .0342 -.0342 .0450 .0857 .0857 .0857 .0857 .0857 .0857 .0857 .0857  
40.000 .2386 .0900 .0186 -.0191 -.0191 -.0191 -.0191 -.0191 -.0191 -.0191 -.0191 -.0191 -.0191  
55.000 .1929 .0436 -.0219 -.0839 -.0839 -.0839 -.0839 -.0839 -.0839 -.0839 -.0839 -.0839 -.0839  
70.000 .1610 .0193 -.0507 -.0686 -.0686 -.0686 -.0686 -.0686 -.0686 -.0686 -.0686 -.0686 -.0686  
90.000 .1958 .0117 -.0494 -.0625 -.0625 -.0625 -.0625 -.0625 -.0625 -.0625 -.0625 -.0625 -.0625  
120.000 .1479 .0331 -.0371 .0150 .0150 .0150 .0150 .0150 .0150 .0150 .0150 .0150 .0150  
140.000 .1261 .0655 .0085 .0504 .0504 .0504 .0504 .0504 .0504 .0504 .0504 .0504 .0504  
150.000 .1261 .0655 .0085 .0504 .0504 .0504 .0504 .0504 .0504 .0504 .0504 .0504 .0504  
151.000 .1261 .0655 .0085 .0504 .0504 .0504 .0504 .0504 .0504 .0504 .0504 .0504 .0504  
162.000 .1261 .0655 .0085 .0504 .0504 .0504 .0504 .0504 .0504 .0504 .0504 .0504 .0504  
165.000 .1261 .0655 .0085 .0504 .0504 .0504 .0504 .0504 .0504 .0504 .0504 .0504 .0504  
169.000 .1261 .0655 .0085 .0504 .0504 .0504 .0504 .0504 .0504 .0504 .0504 .0504 .0504  
174.000 .1261 .0655 .0085 .0504 .0504 .0504 .0504 .0504 .0504 .0504 .0504 .0504 .0504  
180.000 .1261 .0655 .0085 .0504 .0504 .0504 .0504 .0504 .0504 .0504 .0504 .0504 .0504

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-.2058

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TABULATED PRESSURE DATA - 0A148 ( ANES 11-073-1 )

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ANES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB8827)

ALPHA ( 4 ) = 8.041 BETA ( 5 ) = 8.297 MACH = .59590 Q = 593.13 P = 2386.0 RV/L = 4.8429

## SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460  | .0700  | .1120  | .1580 | .1660  | .1770   | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|-------|-------|-------|--------|--------|--------|-------|--------|---------|--------|--------|--------|--------|-------|-------|
| PHI     |       |       |       |        |        |        |       |        |         |        |        |        |        |       |       |
| 20.000  | .9572 | .6294 | .2261 | .1193  | .0308  |        |       | -.0298 | -.0322  | -.0184 | .0057  | .0378  | .0750  | .0765 |       |
| 40.000  |       |       | .1795 | .0741  | -.0048 | -.0422 |       | -.0651 | -.0815  | -.1616 | -.1599 | -.0842 | -.0320 | .0133 | .0871 |
| 55.000  |       |       | .1239 | .0170  | -.0522 | -.0828 |       | -.1171 | -.2683  |        |        |        |        |       |       |
| 70.000  |       |       | .0508 | -.0693 | -.1183 | -.1626 |       | -.2227 | -.3082  | -.1953 | -.1350 | -.1220 |        |       |       |
| 90.000  |       | .0174 | .0297 | -.0864 | -.1392 | -.1273 |       | -.2184 | -.3953  | -.3112 | -.1723 | -.1051 | -.0933 |       |       |
| 120.000 |       |       | .0432 | -.0859 | -.1256 | -.1278 |       | -.2305 | -.5079  | -.3594 | -.2423 | -.0674 | -.0657 |       |       |
| 140.000 |       |       | .0482 | -.0507 | -.1159 | -.0568 |       | -.2092 | -.6077  |        |        |        |        |       |       |
| 150.000 |       |       | .0527 | .0102  | -.0562 | -.0091 |       | .0739  | -.7789  | -.3252 | -.1568 | -.0750 | -.0651 |       |       |
| 162.000 |       |       |       |        |        |        |       | -.3420 |         |        |        |        |        |       |       |
| 165.000 |       |       |       |        |        |        |       | -.3311 |         |        |        |        |        |       |       |
| 169.000 |       |       |       |        |        |        |       |        | -1.2896 | -.3023 | -.1606 | -.0963 | -.0885 |       |       |
| 174.000 |       |       |       |        |        |        |       | .2301  |         |        |        |        |        |       |       |
| 180.000 | .9572 | .1882 | .0912 | .0277  | -.0339 | .0573  | .3926 | .2000  | -1.5344 | -.3211 | -.1894 | -.1262 | -.1020 |       |       |

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|
| PHI     |        |        |        |        |        |        |        |       |        |        |
| 40.000  | .0691  | .0275  | -.0341 | -.1247 | -.1381 | -.2116 | -.2122 |       | -.0876 | -.1452 |
| 70.000  | .0703  |        | -.0173 | -.1030 | -.1691 | -.1520 | -.1555 |       | -.0864 | -.1362 |
| 90.000  | -.3657 | -.3294 | -.2026 | -.0697 | -.1580 | -.1213 | -.1318 |       |        |        |
| 105.000 | -.2634 | -.2485 | -.1420 | -.0754 | -.2412 | -.1899 | -.1754 |       |        |        |
| 110.000 |        |        | -.1052 | -.0170 | -.3769 | -.2577 | -.2350 |       |        |        |
| 120.000 | -.1478 | -.1453 | -.0588 | .1827  | -.5012 | -.3638 | -.2878 |       |        |        |
| 135.000 |        |        | .0474  | .3555  | -.4860 | -.3455 | -.2899 |       |        |        |
| 150.000 | -.0902 | -.0547 | .0776  | .1094  | -.4984 | -.3819 | -.2874 |       |        |        |
| 165.000 | -.0956 |        | .0844  |        | -.3840 | -.3684 | -.1769 |       |        |        |
| 180.000 | -.1120 | -.0355 | .1070  | .1747  |        |        |        |       |        |        |

ALPHA ( 5 ) = 11.909 BETA ( 1 ) = -7.850 MACH = .59646 Q = 594.33 P = 2386.5 RV/L = 4.8458

## SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |        |        |        |        |        |       |       |
| 20.000  | .9248 | .7725 | .3693 | .2242 | .1468 |       |       | .0415 | .0353  | .0412  | .0564  | .0860  | .1354  | .1508 |       |
| 40.000  |       |       | .4528 | .2867 | .1720 | .0922 |       | .0629 | .0493  | .0820  | .0949  | .1283  | .1457  | .1586 | .2081 |
| 55.000  |       |       | .5895 | .3725 | .1865 |       |       | .1133 | .0820  |        |        |        |        |       |       |
| 70.000  |       |       | .5736 | .3853 | .2821 | .1787 |       | .0729 | -.0136 |        |        |        |        |       |       |
| 90.000  |       |       | .4874 | .3198 | .2090 | .1540 |       | .0358 | -.0824 | -.1804 | -.1182 | -.0938 | -.0898 |       |       |
| 120.000 |       | .5468 | .4077 | .2564 | .1937 | .1183 |       | .0165 | -.1728 | -.2186 | -.1654 | -.1303 | -.1328 |       |       |
|         |       |       | .2196 | .0920 | .0076 | .0484 |       | .0389 | -.3199 | -.4281 | -.5583 | -.4779 | -.5082 |       |       |



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XE8827)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 5 ) = 11.929 BETA ( 2 ) = -3.836

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1560 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

180.000 .9514 .1114 -.0149 -.0146 -.0435 .0318 .2060 -1.8311 -.2972 -.1523 -.0800 -.0854

X/LB

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .1515 .1025 .0325 -.0625 -.0964 -.1710 -.1928 -.0703 -.1413  
-0.0000 .1765 -.0522 -.0318 -.1166 -.0881 -.1606 -.0805 -.1136

X/LB

.0000 .4794 -.7415 -.1359 .0807 -.0122 .0077 -.0431  
.0000 .3577 -.2361 -.0619 .1338 -.0495 -.0625 -.0981  
100.000 .0107 .2593 -.1248 -.1155 -.1630  
110.000 .0731 .1691 -.2804 -.2044 -.1625  
120.000 .0755 .1159 -.2770 -.2051 -.2163

X/LB

.0000 .1792 -.0344 .0537 .2479 -.2005 -.1011 -.1876  
100.000 .1170 .0516  
110.000 .1143 -.0254 .1093 .3818  
120.000 .2446  
130.000 .1977

ALPHA ( 5 ) = 11.930 BETA ( 3 ) = .181 MACH = .525-6 Q = 594.33 P = 2386.5 RN/L = 4.8459

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 .2614 .8129 .4040 .2572 .1678 .0895 .0644 .0516 .0558 .0770 .1095 .1488 .1559  
20.000 .4213 .2615 .1555 .0895 .0363 .0357 .0354 .0357 .0270 .0354 .0745 .1099 .1811

X/LB

.0000 .3242 .1552 .0773 .0236 -.1015  
100.000 .2759 .0882 .0137 -.0450  
110.000 .0133 .0719 .0232 -.0157  
120.000 .1215 .0155 -.0445 .0128  
130.000 .0539 .0031 -.0409 .0316  
140.000 .0514 .1105 .0121 -.0092 -.0292 .0475 .2997  
150.000 .0514 .0514

X/LB

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460  
100.000 .0514 .1105 .0121 -.0092 -.0292 .0475 .2997  
110.000 .0514 .1105 .0121 -.0092 -.0292 .0475 .2997  
120.000 .0514 .1105 .0121 -.0092 -.0292 .0475 .2997  
130.000 .0514 .1105 .0121 -.0092 -.0292 .0475 .2997  
140.000 .0514 .1105 .0121 -.0092 -.0292 .0475 .2997  
150.000 .0514 .1105 .0121 -.0092 -.0292 .0475 .2997

PHI

.000 .1492 .0395 .0305 -.0507 -.0247 -.1691 -.1889  
20.000 .1659 .0535 -.0399 -.1242 -.1031 -.1412  
100.000 .0535 -.0399 -.1242 -.1031 -.1412  
110.000 .0535 -.0399 -.1242 -.1031 -.1412  
120.000 .0535 -.0399 -.1242 -.1031 -.1412  
130.000 .0535 -.0399 -.1242 -.1031 -.1412  
140.000 .0535 -.0399 -.1242 -.1031 -.1412  
150.000 .0535 -.0399 -.1242 -.1031 -.1412

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8827)

ALPHA ( 5 ) = 11.930 BETA ( 3 ) = .181

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |       |        |        |        |        |        |        |
| 70.000  | -.5019 | -.3715 | -.1793 | .0142 | -.0831 | -.0552 | -.0846 |        |        |        |
| 90.000  | -.3689 | -.2590 | -.0853 | .0483 | -.1392 | -.1133 | -.1243 |        |        |        |
| 105.000 |        |        | .0040  | .0941 | -.282  | -.1652 | -.1851 |        |        |        |
| 110.000 |        |        |        |       |        |        |        | -.2590 |        |        |
| 120.000 | -.2146 | -.1121 | .0621  | .1700 | -.3006 | -.2273 | -.1924 | -.1903 |        |        |
| 135.000 |        |        | .0395  | .1183 | -.3298 | -.2436 | -.2219 |        |        |        |
| 150.000 | -.1484 | -.0744 | .1061  | .4874 | -.3122 | -.2603 | -.2095 |        |        |        |
| 165.000 | -.0951 |        | .1306  |       | -.1738 | -.2554 | -.1501 |        |        |        |
| 180.000 | -.0875 | -.0038 | .1424  | .4262 |        |        |        |        |        |        |

ALPHA ( 5 ) = 11.930 BETA ( 4 ) = 4.251 MACH = .58646 Q = 594.33 P = 2386.5 RN/L = 4.8458

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460  | .0700  | .1120  | .1580 | .1660  | .1770  | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|-------|-------|--------|--------|--------|-------|--------|--------|---------|--------|--------|--------|--------|-------|
| PHI     |       |       |       |        |        |        |       |        |        |         |        |        |        |        |       |
| .000    | .9465 | .7957 | .3908 | .2418  | .1559  |        |       | .0547  |        | .0423   | .0444  | .0661  | .1043  | .1438  | .1554 |
| 20.000  |       |       | .3558 | .2246  | .1241  | .0601  |       | .0268  |        | .0035   |        |        |        |        |       |
| 40.000  |       |       | .2991 | .1642  | .0742  | .0140  |       | -.0360 |        | -.0924  | -.1113 | -.0314 | .0240  | .0753  | .1564 |
| 55.000  |       |       | .1826 | .0349  | -.0409 | -.1192 |       | -.1892 |        | -.2489  |        |        |        |        |       |
| 70.000  |       |       | .1265 | -.0102 | -.0756 | -.0766 |       | -.1766 |        | -.2742  | -.3217 | -.2331 | -.1968 | -.1911 |       |
| 90.000  |       | .1183 | .1154 | -.0190 | -.0558 | -.0756 |       | -.1813 |        | -.3551  | -.3177 | -.2203 | -.1714 | -.1564 |       |
| 120.000 |       |       | .0700 | -.0273 | -.0896 | -.0204 |       | -.1128 |        | -.4730  | -.3931 | -.3277 | -.1652 | -.1358 |       |
| 140.000 |       |       |       |        |        |        |       |        |        | -.6064  |        |        |        |        |       |
| 150.000 |       |       | .0249 | -.0135 | -.0618 | .0066  |       | .1676  |        | -.8016  | -.3839 | -.1657 | -.0834 | -.0795 |       |
| 160.000 |       |       |       |        |        |        |       |        | -.2335 |         |        |        |        |        |       |
| 165.000 |       |       |       |        |        |        |       |        | -.2529 |         |        |        |        |        |       |
| 174.000 |       |       |       |        |        |        |       |        |        |         |        |        |        |        |       |
| 180.000 | .9465 | .0828 | .0110 | -.0102 | -.0421 | .0372  | .4112 | .2548  |        | -1.4212 | -.3012 | -.1497 | -.0744 | -.0731 |       |

## PHI

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 70.000  |        |        |        |        |        |        |        |        |        |        |
| 90.000  | .1400  | .0959  | .0317  | -.0617 | -.1008 | -.1722 | -.1910 |        |        |        |
| 105.000 | .1509  |        | .0461  | -.0407 | -.1315 | -.1132 | -.1365 |        |        |        |
| 120.000 | -.4983 | -.3889 | -.2111 | -.0445 | -.1392 | -.1048 | -.1158 |        |        |        |
| 135.000 | -.3692 | -.2924 | -.1253 | .0624  | -.2232 | -.1592 | -.1526 |        |        |        |
| 150.000 |        |        | -.0689 | -.0285 | -.3313 | -.2275 | -.2203 |        |        |        |
| 160.000 |        |        |        |        |        |        |        | -.2937 |        |        |
| 174.000 | -.2024 | -.1608 | -.0483 | .0233  | -.4166 | -.3073 | -.2520 | -.2211 |        |        |
| 180.000 | -.1106 | -.0432 | .1227  | .4161  | -.4224 | -.3259 | -.2534 |        |        |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8827)

ALPHA ( 5 ) = 11.930 BETA ( 4 ) = 4.251

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

155.000 -.0973 .1090  
190.000 -.1105 -.0324 .1016 .4065  
-.2909 -.3368 -.1555

ALPHA ( 5 ) = 11.920 BETA ( 5 ) = 8.317 MACH = .59646 Q = 594.33 P = 2386.5 RN/L = 4.8458

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.0000 .9868 .7571 .3649 .2260 .1269 .0248  
25.000 .2942 .1699 .0745  
50.000 .1643 .0594 -.0158 -.0776  
75.000 .0287 -.0969 -.1464 -.2225  
100.000 -.0029 -.1073 -.1613 -.1334  
125.000 -.0628 -.0006 -.1033 -.1357 -.1312  
150.000 -.0041 -.1007 -.1445 -.0660  
175.000 -.0322 -.0558 -.1143 -.0371  
200.000 .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740.0435  
-.0161  
-.1171  
-.2649  
-.2159  
-.2265  
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-.0610  
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-.3727.0304 .0318 .0611 .0976 .1316 .1416  
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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-C/310A148) -14CA/B/C/R ORB FUSELAGE

(XE8828)

ALPHA ( 1 ) = -3.971 BETA ( 2 ) = .185 MACH = 1.3927 Q = 599.58 P = 441.59 RN/L = 2.9214

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | PHI    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120  | .1580  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 20.000  | 1.4759 | .6723 | .2127 | .0842 | .0157 | .0098 | -.0449 | -.0538 | -.0458 | -.0306 | -.0027 | -.0124 | -.0441 | -.0536 | -.0540 |
| 40.000  |        |       | .2437 | .0936 | .0098 | .0535 | -.0505 | -.0497 | -.1150 | -.1188 | -.1079 | -.0652 | -.0805 | -.0446 |        |
| 60.000  |        |       | .3878 | .1146 | .0535 | .1679 | .0420  | .0732  | .0303  |        |        |        |        |        |        |
| 80.000  |        |       | .5062 | .2354 | .1679 | .0420 |        | .1550  | .0748  | -.2445 | -.1674 | -.1086 | .0000  |        |        |
| 100.000 |        |       | .5794 | .3060 | .2239 | .1305 |        | .2053  | -.0131 | -.2405 | -.2428 | -.1315 | -.0057 |        |        |
| 120.000 | .7969  |       | .6423 | .3925 | .2345 | .1630 |        | .4612  | .0455  | -.1864 | -.4078 | -.1783 | -.0512 |        |        |
| 140.000 |        |       | .7200 | .5236 | .3570 | .3810 |        |        | -.0736 | -.1715 | -.3029 | -.1414 | -.0729 |        |        |
| 160.000 |        |       | .7448 | .6095 | .4504 | .5150 |        | .9290  |        |        |        |        |        |        |        |
| 180.000 |        |       |       |       |       |       |        | .6558  |        |        |        |        |        |        |        |
|         |        |       |       |       |       |       |        | .7407  |        |        |        |        |        |        |        |

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X/LB

PHI

.000

.0080

.0230

.0460

.0700

.1120

.1580

.1770

.2040

.2510

.3010

.3780

.4970

.5740

ALPHA ( 1 ) = -3.978 BETA ( 3 ) = 4.270 MACH = 1.3927 Q = 599.58 P = 441.59 RN/L = 2.9214

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | PHI    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| 20.000  | 1.4608 | .6573 | .2049 | .0683 | .0181 | .0020 | -.0403 | -.0598 | -.0453 | -.0065 | -.0134 | -.0365 | -.0659 | -.0619 |       |       |
| 40.000  |        |       | .2134 | .0760 | .0020 | .0535 | -.0505 | -.0497 | -.0813 | -.0766 | -.0745 | -.0549 | -.0731 | -.0395 |       |       |
| 60.000  |        |       | .3206 | .1584 | .0020 | .1679 | .0420  | .0732  | .0304  |        |        |        |        |        |       |       |
| 80.000  |        |       | .4124 | .1584 | .0020 | .1679 | .0420  | .0732  | .0304  |        |        |        |        |        |       |       |
| 100.000 |        |       | .4744 | .2114 | .1355 | .0543 |        | .2053  | .0153  | -.2904 | -.2242 | -.1396 | -.0115 |        |       |       |
| 120.000 | .6485  |       | .5333 | .2780 | .1341 | .0720 |        | .4612  | -.0131 | -.3046 | -.3020 | -.1537 | -.0195 |        |       |       |
| 140.000 |        |       | .6237 | .4356 | .2662 | .2837 |        |        | -.0617 | -.2551 | -.4566 | -.2389 | -.0802 |        |       |       |
| 160.000 |        |       |       |       |       |       |        | .9290  |        |        |        |        |        |        |       |       |
| 180.000 |        |       |       |       |       |       |        | .6558  |        |        |        |        |        |        |       |       |
|         |        |       |       |       |       |       |        | .7407  |        |        |        |        |        |        |       |       |

1.0351

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB828)

ALPHA ( 1 ) = -3.978 BETA ( 3 ) = 4.270

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

140.000  
150.000  
151.000  
162.000  
165.000  
169.000  
174.000  
180.000

1.4608 .9863 .7332 .6091 .4850 .5487 1.0373  
1.0373 1.0106 .9990 1.0180 1.0460

X/LB

PHI

40.000  
70.000  
90.000  
105.000  
110.000  
120.000  
135.000  
150.000  
165.000  
180.000

-.0355 -.0142 -.0423 -.0908 -.1619 -.2056 -.2592  
-.0191 -.0336 -.0780 -.0780 -.1652 -.1262 -.2043  
-.0456 -.0224 -.0111 .2305 .0910 -.0173 -.1485  
.0577 .0114 .1445 .2106 .0355 -.0543 -.0970  
.2648 .1894 -.0565 -.0903 -.1196  
.0253 .0453 .2695 .0334 -.0664 -.1927 -.2698  
.3449 .3515 .0306 -.0581 -.1004  
-.0080 .0272 .3642 .3669 .1232 .0130 -.0632  
-.0168 .3700 .3465 .1123 -.3309  
-.0212 .0228 .3804 .4277

ALPHA ( 2 ) = -.069 BETA ( 1 ) = -3.876 MACH = 1.3934 Q = 600.11 P = 441.59 RN/L = 2.9212

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

20.000  
40.000  
55.000  
70.000  
90.000  
120.000  
140.000  
150.000  
151.000  
162.000  
165.000  
174.000

1.4802 .7977 .3167 .1638 .0769  
.3653 .1879 .0816 .0013  
.5326 .2399 .1555 .0455  
.6464 .3788 .2931 .1618  
.6975 .4338 .3298 .2223  
.7310 .4793 .3355 .2529  
.7399 .5466 .3861 .3543  
.6869 .5451 .3840

-.0170  
-.0041  
-.0043  
.1597  
.1348  
.1779  
.1369  
.1579  
.1082  
-.1210  
.7212  
.7725  
1.0233  
1.0332

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB828)

ALPHA ( 2 ) = -.069 BETA ( 1 ) = -3.876

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

180.000 1.4802 .8950 .6052 .5084 .3505 .3788 .9508 -.3016 -.3366 -.1980 -.1706 -.0943

X/LB

PHI

.0000 .0095 .0041 -.0375 -.1014 -.1528 -.1911 .2545 .2474

40.000

70.000

90.000

105.000

112.000

120.000

135.000

150.000

165.000

180.000

PHI

-.0203 -.0165 .2724 .2242 .0271 -.1137 -.1369

.0303 .0015 .3227 .3276 .0491 .1173 .0475

-.0293 .3195

-.0283 .0131 .3085 .3087

ALPHA ( 2 ) = -.045 BETA ( 2 ) = .182 MACH = 1.3934 Q = 600.11 P = 441.59 RN/L = 2.9212

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.0000 1.4832 .7973 .3303 .1653 .0907 .0810 .0181

20.000

40.000

60.000

80.000

100.000

120.000

140.000

150.000

162.000

165.000

169.000

174.000

180.000

X/LB

PHI

.0000 .0099 .0190 .0097 -.0299 -.1001 -.1456 -.1978

40.000

.0035

.0054

.0054

.0054

.0054

.0054

.0054

.0054

.0054

.0054

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.0054

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB828)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = -.045 BETA ( 2 ) = .182

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |       |        |        |        |        |        |        |
| 70.000  | -.0028 | -.0970 | -.1232 | .0754 | .0225  | -.0554 | -.1646 |        |        |        |
| 90.000  | .0269  | -.0413 | .0244  | .0995 | -.0207 | -.0539 | -.1059 |        |        |        |
| 105.000 |        |        | .1575  | .1232 | -.1212 | -.1183 | -.1434 |        |        |        |
| 110.000 |        |        |        |       |        |        |        | -.2491 |        |        |
| 120.000 | .0399  | .0061  | .2689  | .1935 | .0042  | -.1505 | -.2187 | -.2302 |        |        |
| 135.000 |        |        | .2638  | .3360 | .0785  | -.0356 | -.0760 |        |        |        |
| 150.000 | -.0035 | .0229  | .2939  | .3532 | .1125  | .0489  | -.0269 |        |        |        |
| 165.000 | -.0799 | .3132  | .3132  | .3344 | .1297  | -.3088 |        |        |        |        |
| 180.000 | -.0135 | .0157  | .3245  | .4274 |        |        |        |        |        |        |

ALPHA ( 2 ) = -.049 BETA ( 3 ) = .4247 MACH = 1.3934 Q = 600.11 P = 441.59 RM/L = 2.9212

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |        |        |        |        |        |        |        |       |
| 20.000  | 1.4729 | .7826 | .3259 | .1503 | .0944 |       |       | -.0175 | -.0183 | -.0035 | -.0021 | .0023  | -.0293 | -.0342 |       |
| 40.000  |        |       | .3214 | .1508 | .0678 | .0192 |       | -.0142 | -.0247 | -.0035 | -.0248 | -.0097 | -.0496 | -.0301 |       |
| 60.000  |        |       | .3972 | .1659 | .0196 | .0413 |       | -.0009 | -.0238 |        |        |        |        |        |       |
| 70.000  |        |       | .4572 | .2058 | .1527 | .0413 |       | .0521  | .0606  |        |        |        |        |        |       |
| 90.000  |        | .6223 | .4867 | .2289 | .1579 | .0644 |       | .1055  | .0702  | -.2579 | -.1918 | -.1528 | -.0480 |        |       |
| 120.000 |        |       | .5215 | .2743 | .1489 | .0757 |       | .1524  | -.0353 | -.2706 | -.2765 | -.1741 | -.0489 |        |       |
| 140.000 |        |       | .5713 | .3907 | .2277 | .2140 |       | .3643  | -.0355 | -.2701 | -.4548 | -.1925 | -.0864 |        |       |
| 150.000 |        |       | .5928 | .4883 | .3091 | .3055 |       | .8218  | -.1959 | -.2472 | -.3565 | -.2418 | -.2026 | -.0861 |       |
| 162.000 |        |       |       |       |       |       |       |        | .5334  |        |        |        |        |        |       |
| 165.000 |        |       |       |       |       |       |       |        | .5373  |        |        |        |        |        |       |
| 169.000 |        |       |       |       |       |       |       |        |        | -.2153 | -.3651 | -.1880 | -.1847 | -.0951 |       |
| 174.000 |        |       |       |       |       |       |       |        |        |        |        |        |        |        |       |
| 180.000 | 1.4728 | .8636 | .6154 | .5182 | .3777 | .3711 | .9742 | .9742  | -.3186 | -.3381 | -.2395 | -.1703 | -.1025 |        |       |

X/LB

PHI

|         |        |        |        |        |        |        |        |  |  |  |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--|--|--|--|--|--|--|--|
| 20.000  | -.0214 | .0164  | .0069  | -.0326 | -.1009 | -.1448 | -.2010 |  |  |  |  |  |  |  |  |
| 40.000  | .0182  | .0225  | .0225  | -.0170 | -.1021 | -.0661 | -.1629 |  |  |  |  |  |  |  |  |
| 70.000  | -.0087 | -.1182 | -.0941 | .0916  | -.0002 | -.0866 | -.1920 |  |  |  |  |  |  |  |  |
| 90.000  | .0213  | -.0615 | .0391  | .0916  | -.0609 | -.0979 | -.1381 |  |  |  |  |  |  |  |  |
| 120.000 |        |        | .1744  | .1334  | -.1603 | -.1648 | -.1790 |  |  |  |  |  |  |  |  |
| 140.000 |        |        |        |        |        |        |        |  |  |  |  |  |  |  |  |
| 162.000 | .0152  | .0067  | .2267  | .0575  | -.0753 | -.2188 | -.3191 |  |  |  |  |  |  |  |  |
| 165.000 |        |        | .2854  | .2835  | -.0014 | -.1012 | -.1447 |  |  |  |  |  |  |  |  |
| 180.000 | -.0598 | .0265  | .3020  | .2955  | .0819  | -.0307 | -.1074 |  |  |  |  |  |  |  |  |

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TABULATED PRESSURE DATA - 00145 ( AMES 11-072-1 )  
 AMES 11-07310A148: - 0A/8/C. 0RB FUSELAGE

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(1720228)

ALPHA ( 2 ) = -.049 PPA ( 3 ) = 4.247

SECTION ( 1 ) ORBITER FUSELAGE

| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9 | .9080 | 1.0180 | 1.0460 |
|---------|--------|-------|-------|-------|-------|----|-------|--------|--------|
| PHI     |        |       |       |       |       |    |       |        |        |
| 165.000 | -.0200 |       | .3057 |       |       |    |       |        |        |
| 180.000 | -.0303 | .0235 | .3118 | .3203 | .2486 |    |       |        |        |

ALPHA ( 3 ) = 3.888 BETA ( 1 ) = -3.879 MACH

SECTION ( 1 ) ORBITER FUSELAGE

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .180 | .1660 | .1770 | .2040 | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|------|-------|-------|-------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |      |       |       |       |        |        |        |        |       |
| 20.000  | 1.4674 | .9197 | .4347 | .2616 | .1617 |      | .0405 |       | .0314 | .0329  | .0354  | .0467  | .0205  | .0140 |
| 40.000  |        |       | .4765 | .2869 | .1709 |      | .0573 |       | .0177 | .0165  |        |        |        |       |
| 55.000  |        |       | .6215 | .3468 | .2530 |      | .0875 |       | .0174 | .0553  | .0295  | .0399  | .0092  | .0305 |
| 70.000  |        |       | .6888 | .4320 | .3433 |      | .1808 |       |       |        |        |        |        |       |
| 90.000  |        |       | .6963 | .4450 | .3419 |      | .1931 |       | .2071 | -.1360 | -.0512 | -.0441 | -.0882 |       |
| 120.000 | .8715  |       | .6973 | .4569 | .3301 |      | .2671 |       | .1844 | -.1315 | -.1083 | -.0941 | -.0876 |       |
| 140.000 |        |       | .6593 | .4704 | .3313 |      | .5545 |       | .1705 | -.1185 | -.3180 | -.2409 | -.1503 |       |
| 150.000 |        |       | .5677 | .4447 | .2747 |      | .9379 |       | .1037 | -.3931 | -.3274 | -.1868 | -.1107 |       |
| 162.000 |        |       |       |       |       |      |       |       | .7026 |        |        |        |        |       |
| 165.000 |        |       |       |       |       |      |       |       | .7448 |        |        |        |        |       |
| 174.000 |        |       |       |       |       |      |       |       |       |        |        |        |        |       |
| 180.000 |        |       |       |       |       |      |       |       |       |        |        |        |        |       |

| X/LB    | .7615  | .4810  | .4131  | .2529  | .2737  | .9504  | .9838  | .9084 | -.3480 | -.3837 | -.2418 | -.2010 | -.0784 |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |       |        |        |        |        |        |
| 40.000  | .0362  | .0449  | .0617  | .0270  | -.0348 | -.0853 | -.1235 |       |        |        |        |        |        |
| 70.000  | .0548  | .0598  | .0247  | .0247  | -.0557 | .0154  | .1091  |       |        |        |        |        |        |
| 90.000  | -.0518 | -.1550 | -.2017 | -.0897 | -.0226 | -.0767 | -.1620 |       |        |        |        |        |        |
| 105.000 | -.0218 | -.0935 | .1694  | .0510  | -.0644 | -.0953 | -.1396 |       |        |        |        |        |        |
| 110.000 |        |        | -.1094 | .1127  | -.1046 | -.2020 | -.1748 |       |        |        |        |        |        |
| 120.000 | -.0962 | -.1057 | .1965  | .1543  | -.0142 | -.1628 | -.2152 |       |        |        |        |        |        |
| 135.000 |        |        | .2286  | .2305  | -.0224 | -.1295 | -.0902 |       |        |        |        |        |        |
| 150.000 | -.0496 | .0004  | .2263  | .2342  | -.0561 | .0444  | -.0269 |       |        |        |        |        |        |
| 165.000 | -.0423 |        | .2346  |        | .2785  | .1703  | -.2580 |       |        |        |        |        |        |
| 180.000 | -.0372 | .0524  | .2243  | .2737  |        |        |        |       |        |        |        |        |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

(B2B3X)

AMES 11-07310A148) -140A/B/C/R ORB FUSELAGE

| DATE | TIME | WAVE | Q    | P | FN/L   | 2.9184 |
|------|------|------|------|---|--------|--------|
| 170  | WAVE | 1    | 3020 | 0 | 442.06 | 2.9184 |

## SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |       |        |        |        |        |        |       |
| .000    | 1.4699 | .9180 | .4387 | .2604 | .1727 |       |       | .0450 |       | .0347  | .0281  | .0527  | .0522  | .0241  | .0194 |
| 20.000  |        |       | .4545 | .2690 | .1633 | .0826 |       | .0433 |       | .0208  |        |        |        |        |       |
| 40.000  |        |       | .5469 | .3027 | .2188 | .1053 |       | .0712 |       | .0116  | .0645  | .0340  | .0454  | .0087  | .0137 |
| 55.000  |        |       |       |       | .2683 | .1380 |       | .1162 |       | .1133  |        |        |        |        |       |
| 70.000  |        |       | .5862 | .3365 | .2541 | .1462 |       | .1266 |       | .1521  | -.1831 | -.1061 | -.1002 | -.1110 |       |
| 90.000  |        | .7323 | .5909 | .3353 | .2541 | .1462 |       | .2064 |       | .0797  | -.1909 | -.1763 | -.1881 | -.0925 |       |
| 120.000 |        |       | .5994 | .3565 | .2400 | .1495 |       | .4779 |       | .0797  | -.1975 | -.3700 | -.2004 | -.1033 |       |
| 140.000 |        |       | .5852 | .4052 | .2645 | .2371 |       |       |       | -.0036 |        |        |        |        |       |
| 150.000 |        |       | .5377 | .4337 | .2518 | .2723 |       | .6403 |       | -.2096 | -.4000 | -.2839 | -.1755 | -.0683 |       |
| 151.000 |        |       |       |       |       |       |       |       | .6181 |        |        |        |        |        |       |
| 162.000 |        |       |       |       |       |       |       |       | .6976 |        |        |        |        |        |       |
| 165.000 |        |       |       |       |       |       |       |       |       | -.2467 | -.3659 | -.2573 | -.1914 | -.0610 |       |
| 169.000 |        |       |       |       |       |       |       | .9470 |       |        |        |        |        |        |       |
| 174.000 |        |       |       |       |       |       | .9451 |       |       |        |        |        |        |        |       |
| 180.000 | 1.4699 | .7471 | .4923 | .4155 | .2737 | .2815 |       | .9369 |       | -.3686 | -.3966 | -.2155 | -.1933 | -.0564 |       |

180.000 - .00E3 .007E .10E2  
MACU = 1.3020 P = 442.06 RN/L = 2.9184

## SECTION ( ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| SECTION 1 - JOINTIER PULLEY |        |       |       |       |       |       |       |       |       |        |        |        |        |        |       |
|-----------------------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|
| X/LB                        | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1680 | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
| PHI                         | .000   | .9086 | .4323 | .2559 | .1807 |       |       | .0391 |       | .0266  | .0202  | .0404  | .0534  | .0189  | .0117 |
| 20.000                      |        |       | .4136 | .2432 | .1455 | .0760 |       | .0339 |       | .0138  |        |        |        |        |       |
| 40.000                      | 1.4579 | .9086 | .4136 | .2432 | .1455 | .0760 |       | .0339 |       | .0138  |        |        |        |        |       |
| 55.000                      |        |       | .4814 | .2500 | .1699 | .0695 |       | .0518 |       | .0011  | .0623  | .0241  | .0392  | -.0125 | .0013 |
| 70.000                      |        |       | .4854 | .2400 | .1696 | .0726 |       | .0674 |       | .0637  |        |        |        |        |       |
| 90.000                      |        | .5837 | .4989 | .2607 | .1573 | .0695 |       | .1495 |       | .0275  | -.2197 | -.1586 | -.1515 | -.1157 |       |
| 120.000                     |        |       | .5076 | .3366 | .1960 | .1724 |       | .3730 |       | -.0086 | -.2739 | -.4249 | -.1723 | -.0765 |       |



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TABULATED PRESSURE DATA - 0A148 (AMES 11-073-1)

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ALPHA (4) = 7.940 BETA (1) = -3.870

(XEB828)

AMES 11-073(0A148) - 140A/B/C/R ORB FUSELAGE

## SECTION (1) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 180.000 | 1.4347 | .6189 | .3597 | .3186 | .1814 | .1854 |       | .8642 |        | -.3832 | -.4190 | -.2730 | -.2156 | -.0688 |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |

PHI

| PHI     | .000   | .0972  | .1149  | .1293  | .0956  | .0365  | -.0146 | -.0311 |  | .4710 | .4202 |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--|-------|-------|--|--|--|--|
| 40.000  | .1343  | .1077  | .1496  | .1077  | .0167  | .0982  | -.0429 |        |  | .4637 | .3118 |  |  |  |  |
| 70.000  | -.1330 | -.2404 | -.2799 | -.2235 | -.1359 | -.1341 | -.1691 |        |  |       |       |  |  |  |  |
| 90.000  | -.0960 | -.1955 | -.2382 | -.0345 | -.1378 | -.1980 | -.2138 |        |  |       |       |  |  |  |  |
| 105.000 |        | -.1133 | .0240  | -.1595 | -.1595 | -.2655 | -.2796 |        |  |       |       |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        | -.3185 |  |       |       |  |  |  |  |
| 120.000 | -.1814 | -.1743 | .0772  | .0655  | -.0627 | -.1992 | -.2408 | -.2965 |  |       |       |  |  |  |  |
| 135.000 |        |        | .0623  | .1235  | -.0490 | -.1319 | -.1228 |        |  |       |       |  |  |  |  |
| 150.000 | -.0868 | -.0334 | .0630  | .1250  | .0380  | -.0015 | -.0949 |        |  |       |       |  |  |  |  |
| 165.000 | -.0615 | .0760  |        | .2478  | .1312  | -.2920 |        |        |  |       |       |  |  |  |  |
| 180.000 | -.0487 | -.0242 | .1334  | .3383  |        |        |        |        |  |       |       |  |  |  |  |

ALPHA (4) = 7.946 BETA (2) = .176 MACH = 1.3916 Q = 599.57 P = 442.30 RN/L = 2.9184

## SECTION (1) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 20.000  | 1.4409 | 1.0411 | .5566 | .3789 | .2685 | .1619 |       | .1140 |        | .0954  | .0729  | .0786  | .1026  | .0930  | .0789 |
| 40.000  |        |        | .5720 | .3763 | .2575 | .1793 |       | .1148 |        | .0828  |        |        |        |        |       |
| 55.000  |        |        | .6277 | .4002 | .2929 | .1933 |       | .1414 |        | .0656  | .0987  | .1012  | .0976  | .0639  | .0805 |
| 70.000  |        |        | .6147 | .3794 | .2973 | .1537 |       | .1270 |        | .0746  |        |        |        |        |       |
| 90.000  |        | .6862  | .5826 | .3417 | .2558 | .1558 |       | .1237 |        | .1466  | -.1487 | -.0846 | -.0950 | -.1569 |       |
| 120.000 |        |        | .5625 | .3325 | .2355 | .1374 |       | .1336 |        | .1478  | -.1657 | -.1257 | -.1398 | -.1702 |       |
| 140.000 |        |        | .5084 | .3245 | .2131 | .1808 |       | .4620 |        | .1006  | -.1867 | -.3585 | -.3358 | -.1742 |       |
| 150.000 |        |        | .4258 | .3344 | .1843 | .1938 |       | .7941 |        | -.2151 | -.4388 | -.3460 | -.1875 | -.0740 |       |
| 151.000 |        |        |       |       |       |       |       |       | .8056  |        |        |        |        |        |       |
| 162.000 |        |        |       |       |       |       |       |       | .8618  |        |        |        |        |        |       |
| 165.000 |        |        |       |       |       |       |       |       |        | -.2860 | -.4039 | -.2943 | -.2012 | -.0523 |       |
| 169.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 174.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 180.000 | 1.4409 | .6020  | .3713 | .3270 | .1938 | .1924 | .8429 | .8818 |        |        |        |        |        |        |       |
| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |

PHI

| PHI    | .000  | .1220 | .1454 | .1139 | .0478 | -.0052 | -.0479 |  | .4565 | .4055 |  |  |  |  |  |
|--------|-------|-------|-------|-------|-------|--------|--------|--|-------|-------|--|--|--|--|--|
| 40.000 | .1168 | .1591 | .1238 | .0383 | .0817 | -.0297 |        |  | .4093 | .2872 |  |  |  |  |  |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XE8828)

ALPHA ( 4 ) = 7.946 BETA ( 2 ) = .176

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

70.000 -.1382 -.2511 -.2727 -.1063 -.1559 -.1658 -.2188  
 90.000 -.0783 -.1870 -.2316 -.0183 -.1966 -.2127 -.2108  
 105.000 .0487 -.0448 .0487 -.2309 -.3031 -.2871  
 110.000  
 120.000 -.0725 -.0893 .0905 .0412 -.0879 -.2151 -.2832  
 135.000 .0888 .1445 .1445 -.0267 -.1308 -.1767  
 150.000 -.0417 -.0459 .0902 .3683 .0320 -.0613 -.1219  
 165.000 .0966 .2319 .0107 -.3138  
 180.000 -.0315 -.0212 .1214 .4067  
 -.3202  
 -.3393

ALPHA ( 4 ) = 7.949 BETA ( 3 ) = 4.238 MACH = 1.3916 Q = 589.57 P = 442.30 RW/L = 2.9184

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

20.000 1.4286 1.0307 .5485 .3773 .2673 .2316 .1415 .1110 .0818 .0733 .0698 .1066 .0771 .0740  
 40.000 .5286 .3508 .2316 .2316 .1415 .1289 .1027 .0931 .0672 .0577 .0641 .0858 .0378 .0558  
 55.000 .5319 .3376 .2423 .2423 .1289 .0744 .0577 .1027 .0270 .0147 .0147 .0946 .1475 .2009  
 70.000 .4974 .2871 .2071 .2071 .0794 .0624 .0624 .0736 .0736 .0211 .0211 .0211 .0211 .0211  
 90.000 .5383 .4681 .2373 .2373 .1500 .0626 .0626 .0831 .0831 .0938 .0938 .0938 .0938 .0938  
 120.000 .4398 .2642 .1556 .1556 .1287 .1287 .1287 .3777 .3777 .0938 .0938 .0938 .0938 .0938  
 140.000 .3882 .3135 .1396 .1396 .1568 .1568 .1568 .5078 .5078 .2858 .2858 .2858 .2858 .2858  
 151.000 .5817 .5817 .5817 .5817 .5817 .5817 .5817 .5817 .5817 .5817 .5817 .5817 .5817 .5817  
 162.000  
 165.000  
 169.000  
 174.000  
 180.000 1.4286 .5780 .3701 .3397 .1932 .1818 .7920 .8897 .4047 .4159 .2772 .2137 .0766

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

40.000 .0842 .1253 .1365 .1082 .0430 -.0098 -.0631 .4547 .4144  
 70.000 .1026 .1653 .1272 .1272 .0404 .0691 .0221 .3808 .2668  
 90.000 -.1274 -.2414 -.2672 -.1018 .1478 .1739 .2567  
 105.000 -.0665 -.1755 -.1513 -.0354 .2208 .2087 .1991  
 110.000 .0211 -.0026 .2824 .3372 .2747  
 120.000 -.0371 -.0644 .0709 -.0738 .1322 .2746 .3645  
 135.000 .1387 .1387 .1387 .1387 .1387 .1387 .1387  
 150.000 -.0306 -.0218 .1487 .2943 .0482 .1307 .1880  
 -.3370  
 -.403:

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB828)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 7.949 BETA ( 3 ) = 4.238

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI  
165.000 -.0372 .1132  
180.000 -.0506 -.0148 .1106 .2831  
.1785 -.0852 -.3465

ALPHA ( 5 ) = 11.863 BETA ( 1 ) = -3.856 MACH = 1.3913 Q = 599.66 P = 442.53 RN/L = 2.9180

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3760 .4970 .5740

PHI  
.000 1.3918 1.1455 .6700 .4866 .3527 .2490 .1828 .1644 .1387 .1211 .1414 .1487 .1487  
20.000 .7141 .5083 .3579 .2490 .1862 .1536 .1536 .1536 .1536 .1536 .1536 .1536 .1536  
40.000 .7863 .5474 .4223 .2911 .2441 .1557 .1557 .1557 .1557 .1557 .1557 .1557 .1557  
55.000 .7436 .5144 .4008 .2417 .2024 .1349 .1349 .1349 .1349 .1349 .1349 .1349 .1349  
70.000 .6742 .4517 .3357 .2316 .1899 .1292 .1292 .1292 .1292 .1292 .1292 .1292 .1292  
90.000 .5155 .4081 .2940 .1934 .1809 .2244 .2244 .2244 .2244 .2244 .2244 .2244 .2244  
120.000 .4907 .3063 .1792 .1574 .4266 .1821 .1821 .1821 .1821 .1821 .1821 .1821 .1821  
140.000 .1401 .1291 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767  
150.000 .3466 .2181 .1401 .1291 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3760 .4970 .5740  
151.000 .1401 .1291 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767  
162.000 .1401 .1291 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767  
165.000 .1401 .1291 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767  
169.000 .1401 .1291 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767  
174.000 .1401 .1291 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767  
180.000 .1401 .1291 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767 .8767

X/LB .13918 .4780 .2530 .2245 .1146 .1192 .6741 .7959 .4113 .4410 .2949 .2075 .0736

PHI

.000 .1761 .1987 .2197 .1848 .1256 .0975 .0583 .5806 .4795  
40.000 .2225 .2520 .2520 .1988 .1107 .2009 .0352 .5083 .3399  
70.000 .1814 .3377 .3651 .2777 .2438 .1933 .1302 .1302 .1302  
90.000 .1519 .2642 .3097 .0911 .2192 .2542 .2182 .2182 .2182  
105.000 .2647 .2647 .2647 .0002 .2235 .3208 .3286 .3286 .3286  
110.000 .1920 .1962 .0397 .0634 .1342 .2317 .2608 .2608 .2608  
120.000 .0397 .0397 .0397 .1338 .1035 .1425 .1722 .1722 .1722  
135.000 .1019 .1743 .0393 .1338 .1035 .1425 .1722 .1722 .1722  
150.000 .0876 .0876 .0876 .2288 .0564 .1396 .2058 .2058 .2058  
165.000 .0876 .0876 .0876 .2166 .2166 .0246 .3192 .3192 .3192  
180.000 .0518 .0636 .0654 .3586 .3586 .3586 .3586 .3586 .3586

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TABULATED PRESSURE DATA - 0A148 ( AVES 11-073-1 )

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AVES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XCE8828)

ALPHA ( 5 ) = 11.873 BETA ( 2 ) = .179 MACH = 1.3913 Q = 599.66 P = 442.53 RN/L = 2.9180

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2310 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|--------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|
| PHI     | .000   | 1.3910 | 1.1511 | .6774 | .4917 | .3651 |       | .1888 | .1832  | .1387  | .1305 | .1528 | .1584 | .1495 |       |
| 20.000  |        |        | .6856  | .4860 | .3429 | .2409 |       | .1801 | .1470  | .1139  | .1344 | .1584 | .1301 | .1507 |       |
| 40.000  |        |        | .6996  | .4845 | .3693 | .2466 |       | .1978 | .1139  | .1284  |       |       |       |       |       |
| 55.000  |        |        | .6262  | .4049 | .3095 | .1447 |       | .1176 | .0592  |        |       |       |       |       |       |
| 70.000  |        |        | .5614  | .3425 | .2482 | .1509 |       | .1172 | .0677  | .1175  | .0723 | .0900 | .1703 |       |       |
| 90.000  |        | .6302  | .5215  | .3078 | .2115 | .1176 |       | .1165 | .1618  | .1475  | .0987 | .1308 | .1971 |       |       |
| 120.000 |        |        | .4293  | .2501 | .1476 | .1155 |       | .3990 | .1168  | .1829  | .3506 | .4367 | .2485 |       |       |
| 140.000 |        |        |        | .3220 | .2350 | .1205 |       | .7297 | .0205  | .4698  | .3980 | .1982 | .0932 |       |       |
| 150.000 |        |        |        |       |       |       |       | .5950 |        |        |       |       |       |       |       |
| 151.000 |        |        |        |       |       |       |       | .6298 |        |        |       |       |       |       |       |
| 162.000 |        |        |        |       |       |       |       |       |        |        |       |       |       |       |       |
| 165.000 |        |        |        |       |       |       |       | .8070 |        |        |       |       |       |       |       |
| 169.000 |        |        |        |       |       |       |       |       |        |        |       |       |       |       |       |
| 174.000 |        |        |        |       |       |       |       |       |        |        |       |       |       |       |       |
| 180.000 | 1.3910 | .4588  | .2609  | .2369 | .1186 | .1273 | .56   | .8190 | .4415  | .4612  | .3207 | .1904 | .2010 | .0468 |       |
| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |

## PHI

|         |       |       |       |       |       |       |       |  |       |       |  |  |  |  |  |
|---------|-------|-------|-------|-------|-------|-------|-------|--|-------|-------|--|--|--|--|--|
| 40.000  | .1726 | .2020 | .2395 | .1966 | .1356 | .0817 | .0424 |  |       |       |  |  |  |  |  |
| 70.000  | .2056 |       | .2569 | .2158 | .1247 | .1793 | .0525 |  | .5750 | .4782 |  |  |  |  |  |
| 90.000  | .2327 | .3588 | .3983 | .2159 | .2659 | .2794 | .2703 |  | .4716 | .3254 |  |  |  |  |  |
| 105.000 | .1450 | .2412 | .3040 | .1100 | .2618 | .2926 | .2592 |  |       |       |  |  |  |  |  |
| 110.000 |       |       | .2008 | .0029 | .3065 | .3689 | .3558 |  |       |       |  |  |  |  |  |
| 120.000 |       | .1216 | .0204 | .0467 | .1365 | .2474 | .3180 |  |       |       |  |  |  |  |  |
| 135.000 |       |       | .0048 | .0776 | .0928 | .1592 | .2110 |  |       |       |  |  |  |  |  |
| 150.000 | .0704 | .0911 | .1066 | .3271 | .0278 | .1164 | .1649 |  |       |       |  |  |  |  |  |
| 165.000 | .0473 |       | .0559 |       | .2269 | .0316 | .3294 |  |       |       |  |  |  |  |  |
| 180.000 | .0382 | .0342 | .0352 | .3710 |       |       |       |  |       |       |  |  |  |  |  |

ALPHA ( 5 ) = 11.870 BETA ( 3 ) = 4.256 MACH = 1.3913 Q = 599.66 P = 442.53 RN/L = 2.9180

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230  | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2310 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     | .000  | 1.3785 | 1.1367 | .6639 | .4849 | .3569 |       | .1823 | .1543 | .1340 | .1184 | .1511 | .1455 | .1455 |       |
| 20.000  |       |        | .6356  | .4496 | .3128 | .2096 |       | .1599 | .1298 | .1033 | .0773 | .1268 | .1033 | .1222 |       |
| 40.000  |       |        | .5950  | .4078 | .2976 | .1858 |       | .1397 | .0533 | .0632 |       |       |       |       |       |
| 55.000  |       |        | .5004  | .2947 | .2075 | .0541 |       | .0442 | .0067 |       |       |       |       |       |       |
| 70.000  |       |        | .4485  | .2358 | .1613 | .0760 |       | .0550 | .0202 | .1574 | .1220 | .1471 | .2355 |       |       |
| 90.000  |       | .4870  | .4266  | .2143 | .1261 | .0510 |       | .0602 | .0962 | .1883 | .1492 | .1822 | .2437 |       |       |
| 120.000 |       |        | .3662  | .1971 | .1075 | .0864 |       | .3588 | .0363 | .2419 | .3825 | .3846 | .1481 |       |       |



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TABULATED PRESSURE DATA - 0A148 ( AVES 11-073-1 )

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(XEB828)

AVES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 6 ) = 15.854 BETA ( 1 ) = -3.831

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |       |       |
| 180.000 | 1.3150 | .3183  | .1511  | .1385  | .0534  | .0621  |        | .7250  | -.4432 | -.4603 | -.3051 | -.1963 | -.0733 |       |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |       |       |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |       |       |
| .000    | .2726  | .2967  | .3260  | .3080  | .2441  | .1805  | .1225  |        | .6721  | .5286  |        |        |        |       |       |
| 40.000  | .3135  | .3618  | .3200  | .3200  | .2219  | .2760  | .1019  |        | .5398  | .3547  |        |        |        |       |       |
| 70.000  | -.2619 | -.4445 | -.5267 | -.4662 | -.4582 | -.4007 | -.2663 |        |        |        |        |        |        |       |       |
| 90.000  | -.1474 | -.3145 | -.3763 | -.2009 | -.2934 | -.3229 | -.3361 |        |        |        |        |        |        |       |       |
| 105.000 |        | -.2934 | -.3034 | -.0394 | -.3070 | -.3809 | -.3893 |        |        |        |        |        |        |       |       |
| 110.000 |        |        |        |        |        |        |        | -.3784 |        |        |        |        |        |       |       |
| 120.000 | -.2245 | -.1966 | -.1120 | .0943  | -.2006 | -.2841 | -.2959 | -.3614 |        |        |        |        |        |       |       |
| 135.000 |        | -.0389 | -.0362 | .0362  | -.2037 | -.1882 | -.2207 |        |        |        |        |        |        |       |       |
| 150.000 | -.2885 | -.3244 | -.1927 | .1464  | -.3731 | -.2765 | -.3093 |        |        |        |        |        |        |       |       |
| 165.000 | -.1234 | -.2066 |        | .1677  | -.0525 | -.3416 |        |        |        |        |        |        |        |       |       |
| 180.000 | -.0807 | -.0990 | -.1014 | .2581  |        |        |        |        |        |        |        |        |        |       |       |

ALPHA ( 6 ) = 15.868 BETA ( 2 ) = .178 MACH = 1.3903 Q = 589.44 P = 443.00 RN/L = 2.9205

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| .000    | 1.3201 | 1.2483 | .8006 | .6040 | .4692 | .3216 |       | .2726 | .2371  | .2121  | .1910  | .2164  | .2279  | .2348  |       |
| 20.000  |        |        | .8022 | .5907 | .4431 | .3142 |       | .2593 | .2215  | .1540  | .1706  | .2036  | .1987  | .2275  |       |
| 40.000  |        |        | .7642 | .5631 | .4398 | .3101 |       | .2443 | .1540  | .1601  |        |        |        |        |       |
| 55.000  |        |        | .6290 | .4101 | .3058 | .1207 |       | .0910 | .0435  |        |        |        |        |        |       |
| 70.000  |        |        | .5301 | .3249 | .2296 | .1431 |       | .1009 | .0494  | -.1145 | -.0736 | -.0873 | -.1989 |        |       |
| 90.000  | .5648  |        | .4711 | .2721 | .1843 | .0889 |       | .0934 | .1445  | -.1428 | -.0833 | -.1211 | -.1955 |        |       |
| 120.000 |        |        | .3512 | .1688 | .0622 | .0557 |       | .3195 | .1091  | -.1844 | -.3373 | -.5290 | -.3202 |        |       |
| 140.000 |        |        |       |       |       |       |       | .6373 | .0272  | -.1691 | -.4994 | -.4469 | -.2425 | -.1060 |       |
| 150.000 |        |        | .2258 | .1355 | .0593 | .0665 |       |       | .5484  |        |        |        |        |        |       |
| 151.000 |        |        |       |       |       |       |       |       | .6028  |        |        |        |        |        |       |
| 162.000 |        |        |       |       |       |       |       |       |        | -.3542 | -.4569 | -.3345 | -.1883 | -.0674 |       |
| 165.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 169.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 174.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 180.000 | 1.3201 | .2853  | .1616 | .1560 | .0622 | .0667 | .6439 | .7356 | -.4654 | -.4810 | -.2864 | -.1767 | -.0519 |        |       |
| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| .000    | .2654  | .2991  | .3520 | .3215 | .2463 | .1668 | .1132 |       | .6779  | .5359  |        |        |        |        |       |
| 40.000  | .2902  |        | .3720 | .3345 | .2272 | .2702 | .1156 |       | .5326  | .3598  |        |        |        |        |       |

DATE 10 FEB 76 TABULATED PRESSURE DATA - OA148 ( AMES 1 -073-1 )  
 AMES 11-073(OA148) -140A/B/C/H ORR FUSELAGE

(XEBB28)

ALPHA ( 6 ) = 15.868 BETA ( 2 ) = .178

## SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 9990 1.0180 1.0460

PHI  
 70.000 -.3480 -.4887 -.5508 -.4628 -.5027 -.4527 -.2845  
 90.000 -.2100 -.3339 -.4014 -.2573 -.3753 -.3765 -.3253  
 105.000 -.2100 -.3339 -.4014 -.2573 -.3753 -.3765 -.3253  
 110.000 -.1211 -.1636 -.0844 -.0193 -.1930 -.2571 -.3336  
 120.000 -.1211 -.1636 -.0844 -.0193 -.1930 -.2571 -.3336  
 135.000 -.1567 -.1758 -.1889 -.2607 -.2729 -.2313 -.2622  
 150.000 -.0803 -.1080 -.1080 -.2442 -.0727 -.3568  
 165.000 -.0756 -.0539 -.0755 -.2924  
 180.000

ALPHA ( 6 ) = 15.859 BETA ( 3 ) = 4.283 MACH = 1.3903 Q = 599.44 P = 443.00 RN/L = 2.9206

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 1660 1770 2040 2510 3010 3780 4970 5740

PHI  
 000 1.3128 1.2369 .7872 .5930 .4581 .2953  
 20.000 .7510 .4045 .2387  
 40.000 .6516 .4809 .3602 .1995 .0179  
 55.000 .4923 .2888 .1995 .0623  
 70.000 .4056 .2250 .1403 .0264  
 90.000 .3830 .1870 .1087 .0342  
 120.000 .3029 .1271 .0410 .0330  
 140.000 .2044 .1372 .0459 .0524  
 150.000  
 162.000  
 165.000  
 169.000  
 174.000  
 180.000

1.3128 .2670 .1533 .1629 .0700 .0543 .5882 7003 7530 9990 1.0180 1.0460

X/LB

PHI  
 000 .2620 .3109 .3383 .3036 .2355 .1475 .0828  
 40.000 .2566 .3633 .3100 .2218 .2641 .1228  
 70.000 .4068 .4576 .4048 .4729 .3577 .2726  
 90.000 .2232 .3544 .4039 .2723 .4029 .3781 .3440  
 105.000 .2468 .1761 .5117 .5328 .4869  
 110.000  
 120.000  
 135.000  
 150.000

-.1015 -.1369 -.0417 -.1933 -.1817 -.2874 -.3996  
 -.1826 -.0518 -.1789 -.2567 -.2903  
 -.0792 -.0903 -.1137 -.0262 -.1332 -.2176

.6702 .5448  
 .5211 .3680

- 3796  
 - 3936

DATE 10 FEB 76 TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8828)

ALPHA ( 6 ) = 15.859 BETA ( 3 ) = 4.283  
 SECTION ( 1 ) ORBITTER FUSELAGE DEPENDENT VARIABLE CP  
 X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460  
 PH1  
 165.000 -.0597 -.0899 .2790 -.0743 -.3638  
 180.000 -.0787 -.1052 -.2565

DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AVES 11-073-1 )

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AVES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB829) ( 05 AUG 75 )

## REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. X0  
 LREF = 474.8000 IN. YMRP = .0000 IN. Y0  
 BREF = 936.0680 IN. ZMRP = 375.0000 IN. Z0  
 SCALE = .0300

## PARAMETRIC DATA

RUDER = -10.000 SPOBRK = 35.000  
 BOFLAP = 16.300 L-ELVN = 10.000  
 R-ELVN = .000 MACH = 1.250

ALPHA ( 1 ) = -3.986 BETA ( 1 ) = -3.845 MACH = 1.2451 Q = 599.58 P = 552.51 RN/L = 3.0225

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .C700 | .0080 | .0230 | .0460 | .0700  | .1120  | .1580  | .1680  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     | .000  | .6273 | .1852 | .0669 | .0053  | .0555  | .0747  | .0138  | .0119  | -.0157 | -.0557 | -.0690 | -.0990 | -.0610 |        |
| 20.000  | .000  | .2216 | .0747 | .0747 | -.0183 | -.0555 | -.0402 | -.0402 | -.0664 | -.0664 | -.1535 | -.0893 | -.1259 | -.0794 |        |
| 40.000  | .000  | .4081 | .1162 | .1162 | .0350  | -.0539 | -.1044 | -.1044 | -.1986 | -.1986 | -.1535 | -.0893 | -.1259 | -.0794 |        |
| 55.000  | .000  | .5644 | .3010 | .3010 | .2189  | .1237  | .0848  | .0848  | .0218  | .0218  | -.2739 | -.1290 | -.0730 | .0207  |        |
| 70.000  | .000  | .6625 | .4086 | .4086 | .3172  | .2686  | .1882  | .1882  | .0742  | .0742  | -.2418 | -.2384 | -.0940 | .0114  |        |
| 90.000  | .000  | .7342 | .4867 | .4867 | .3685  | .3297  | .2375  | .2375  | .0145  | .0145  | -.1793 | -.4173 | -.1334 | -.0256 |        |
| 120.000 | .000  | .8013 | .6110 | .6110 | .4836  | .5248  | .4944  | .4944  | .0435  | .0435  | -.3922 | -.2309 | -.1275 | -.0742 |        |
| 140.000 | .000  | .7919 | .6443 | .6443 | .5353  | .6088  | .9190  | .9190  | .6482  | .6482  | -.2649 | -.2923 | -.1419 | -.0849 |        |
| 150.000 | .000  |       |       |       |        |        |        |        | .7050  | .7050  | -.3726 | -.3719 | -.1780 | -.1653 | -.0945 |
| 162.000 | .000  |       |       |       |        |        |        |        |        |        |        |        |        |        |        |
| 165.000 | .000  |       |       |       |        |        |        |        |        |        |        |        |        |        |        |
| 169.000 | .000  |       |       |       |        |        |        |        |        |        |        |        |        |        |        |
| 174.000 | .000  |       |       |       |        |        |        |        |        |        |        |        |        |        |        |
| 180.000 | .000  |       |       |       |        |        |        |        |        |        |        |        |        |        |        |

## X/LB

## PHI

| X/LB    | .6520 | .7290  | .7790  | .8210  | .8790 | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|-------|--------|--------|--------|-------|--------|--------|-------|--------|--------|
| PHI     | .000  | -.0233 | -.0561 | -.1201 | .1955 | -.2497 | -.2788 | .2307 | .1957  | .0881  |
| 40.000  | .000  | -.0574 | -.0860 | -.1245 | .2055 | -.1449 | -.2701 | .1536 | .0881  |        |
| 70.000  | .000  | .0037  | -.0107 | .3159  | .1489 | -.0041 | -.1933 |       |        |        |
| 90.000  | .000  | .0990  | .0447  | .2715  | .1224 | .0103  | -.0785 |       |        |        |
| 105.000 | .000  |        | .3067  | .2778  | .0472 | -.0400 | -.0936 |       |        |        |
| 110.000 | .000  |        |        |        |       |        |        |       |        |        |
| 120.000 | .000  | .0685  | .4267  | .2923  | .0103 | -.0358 | -.0537 |       |        |        |
| 135.000 | .000  |        | .4781  | .4850  | .0505 | .0647  | .0317  |       |        |        |
| 150.000 | .000  | .0400  | .4703  | .4740  | .1530 | .1484  | .0545  |       |        |        |
| 165.000 | .000  | .0225  | .4600  | .4600  | .4320 | .2368  | -.3150 |       |        |        |
| 180.000 | .000  | .0122  | .4519  | .4953  |       |        |        |       |        |        |

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TABULATED PRESSURE DATA - 0A148 (AWES 11-073-1)

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AWES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB829)

ALPHA (1) = -3.967 BETA (2) = .186 MACH = 1.2451 Q = 599.58 P = 552.51 RN/L = 3.0225

## SECTION (1) ORBITTER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     | 1.4060 | .6288  | .2002  | .0559  | .0305  |        |        | -.0103 |        | .0017  | -.0084 | -.0547 | -.0763 | -.0944 | -.0549 |
| 20.000  | .2150  |        |        | .0696  | -.0030 | -.0299 |        | -.0232 |        | -.0382 |        |        |        |        |        |
| 40.000  | .3541  |        |        | .0936  | -.0338 | -.0315 |        | -.0569 |        | -.1472 |        |        |        |        |        |
| 55.000  | .4756  |        |        | .2211  | .1589  | .0708  |        | .0592  |        | -.0233 |        |        |        |        |        |
| 70.000  | .5574  |        |        | .2986  | .2294  | .1815  |        | .1337  |        | .0113  |        |        |        |        |        |
| 90.000  | .6262  | .7816  |        | .3729  | .2718  | .2274  |        | .1645  |        | -.0851 |        |        |        |        |        |
| 120.000 | .7108  |        |        | .5197  | .3863  | .4456  |        | .3924  |        | -.0422 |        |        |        |        |        |
| 140.000 |        |        |        |        |        |        |        |        |        | -.1642 |        |        |        |        |        |
| 150.000 |        |        |        | .6142  | .4987  | .5707  |        | .8533  |        | -.2793 |        |        |        |        |        |
| 162.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 169.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 174.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 180.000 | 1.4060 | .9963  | .7413  | .6222  | .5388  | .6150  | 1.0415 | .9503  |        | -.2722 |        |        |        |        |        |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |        |
| PHI     | .0027  | -.0218 | -.0500 | -.1159 | -.1959 | -.2488 | -.2915 |        | .2259  | .2129  |        |        |        |        |        |
| 40.000  | -.0392 |        | -.0658 | -.1105 | -.1905 | -.1556 | -.2539 |        | .1144  | .0686  |        |        |        |        |        |
| 70.000  | .0684  | -.0050 | -.1144 | .2966  | .1064  | -.0408 | -.2178 |        |        |        |        |        |        |        |        |
| 90.000  | .0823  | .0402  | .2268  | .2624  | .0507  | -.0347 | -.1085 |        |        |        |        |        |        |        |        |
| 105.000 |        |        | .3318  | .2399  | -.0188 | -.0827 | -.1298 |        |        |        |        |        |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.3030 |        |        |        |        |        |        |        |
| 120.000 | .0733  | .1056  | .3655  | .1340  | -.0550 | -.1209 | -.1574 | -.2525 |        |        |        |        |        |        |        |
| 135.000 |        |        | .4528  | .4537  | .0124  | -.0231 | -.0550 |        |        |        |        |        |        |        |        |
| 150.000 | .0409  | .1271  | .4726  | .4774  | .1170  | .0451  | -.0295 |        |        |        |        |        |        |        |        |
| 165.000 | .0315  |        | .4776  |        | .3496  | .1170  | -.3591 |        |        |        |        |        |        |        |        |
| 180.000 | .0292  | .1355  | .4874  | .5796  |        |        |        |        |        |        |        |        |        |        |        |

ALPHA (1) = -3.974 BETA (3) = 4.269 MACH = 1.2451 Q = 599.58 P = 552.51 RN/L = 3.0225

## SECTION (1) ORBITTER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770 | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|-------|--------|-------|-------|-------|-------|-------|
| PHI     | 1.3315 | .6168 | .1987 | .0501 | .0312  |        |       | -.0316 |       | -.0136 |       |       |       |       |       |
| 20.000  |        |       |       | .0496 | -.0015 | -.0400 |       | -.0142 |       | -.0    |       |       |       |       |       |
| 40.000  |        |       | .2992 | .0624 | .0209  | -.0324 |       | -.0250 |       | -.0    |       |       |       |       |       |
| 55.000  |        |       | .3889 | .1385 | .0855  | .0216  |       | .0268  |       | -.0    |       |       |       |       |       |
| 70.000  |        |       | .4557 | .1904 | .1331  | .0914  |       | .0716  |       | -.04   |       |       |       |       |       |
| 90.000  | .6357  |       | .5184 | .2578 | .1829  | .1281  |       | .0836  |       | -.0851 |       |       |       |       |       |
| 120.000 |        |       | .6135 | .4198 | .2713  | .3388  |       | .2785  |       | -.1566 |       |       |       |       |       |



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE6829)

ALPHA ( 2 ) = -.035 BETA ( 1 ) = -3.871

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 180.000 | 1.4104 | .8816  | .6088  | .5011  | .3988  | .5149  |        | .8678  |        | -.4218 | -.4278 | -.2396 | -.2064 | -.0776 |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| .000    | .0209  | .0207  | .0122  | -.0485 | -.1202 | -.1759 | -.1979 |        | .2765  | .2418  |        |        |        |        |       |
| 40.000  | -.0149 | -.0088 | -.0088 | -.0435 | -.1337 | -.0650 | -.2068 |        | .2770  | .1856  |        |        |        |        |       |
| 70.000  | -.0141 | -.1027 | -.1672 | .1791  | .0756  | -.0570 | -.2235 |        |        |        |        |        |        |        |       |
| 90.000  | .0374  | -.0342 | -.0445 | .1577  | .0504  | -.0492 | -.1366 |        |        |        |        |        |        |        |       |
| 105.000 |        | .1673  | .1902  | .1902  | -.0205 | -.1177 | -.1626 |        |        |        |        |        |        |        |       |
| 110.000 |        |        |        |        |        |        |        | -.3020 |        |        |        |        |        |        |       |
| 120.000 | .0001  | -.0126 | .3322  | .2216  | -.0468 | -.1204 | -.1194 | -.2447 |        |        |        |        |        |        |       |
| 135.000 |        | .3917  | .3705  | .3705  | -.0227 | -.0289 | -.0414 |        |        |        |        |        |        |        |       |
| 150.000 | .0115  | .0497  | .3790  | .3683  | .0534  | .0571  | -.0083 |        |        |        |        |        |        |        |       |
| 165.000 | .0072  | .3714  |        | .3658  | .1652  | -.3188 |        |        |        |        |        |        |        |        |       |
| 180.000 | .0010  | .1018  | .3549  | .3651  |        |        |        |        |        |        |        |        |        |        |       |

ALPHA ( 2 ) = -.027 BETA ( 2 ) = .182 MACH = 1.2459 Q = 599.80 P = 552.04 RN/L = 3.0192

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE C<sub>D</sub>

| X/LB    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580  | .1660 | .1770  | .2040  | .2510 | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|--------|--------|--------|--------|--------|-------|--------|--------|-------|--------|--------|--------|--------|
| PHI     |        |       |        |        |        |        |        |       |        |        |       |        |        |        |        |
| .000    | 1.4163 | .7565 | .3007  | .1538  | .1108  |        |        | .0161 |        | .0359  | .0335 | -.0035 | -.0277 | -.0559 | -.0506 |
| 20.000  |        | .3221 | .4410  | .1594  | .0778  | .0182  |        | .0342 |        | .0064  |       |        |        |        |        |
| 40.000  |        |       | .5292  | .1150  | .1196  | .0460  |        | .0505 |        | -.0275 |       |        |        |        |        |
| 55.000  |        |       | .5707  | .2820  | .2065  | .1278  |        | .1332 |        | .0562  |       |        |        |        |        |
| 70.000  |        | .7553 | .6091  | .3190  | .2254  | .1799  |        | .1730 |        | .0635  |       |        |        |        |        |
| 90.000  |        |       | .6459  | .3647  | .2350  | .2277  |        | .2053 |        | -.0195 |       |        |        |        |        |
| 120.000 |        |       |        | .4578  | .3128  | .4032  |        | .4150 |        | -.0219 |       |        |        |        |        |
| 140.000 |        |       |        |        |        |        |        |       |        | -.1105 |       |        |        |        |        |
| 150.000 |        |       | .6421  | .5134  | .3713  | .4949  |        | .8236 |        | -.3194 |       |        |        |        |        |
| 151.000 |        |       |        |        |        |        |        |       | .5488  |        |       |        |        |        |        |
| 162.000 |        |       |        |        |        |        |        |       | .6174  |        |       |        |        |        |        |
| 165.000 |        |       |        |        |        |        |        |       |        | -.3234 |       |        |        |        |        |
| 169.000 |        |       |        |        |        |        |        |       |        | -.3924 |       |        |        |        |        |
| 174.000 |        |       |        |        |        |        |        |       |        |        |       |        |        |        |        |
| 180.000 | 1.4163 | .8687 | .6209  | .5059  | .4090  | .5255  | .9946  | .9016 |        | -.4560 |       |        |        |        |        |
| X/LB    | .6520  | .7290 | .7790  | .8210  | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |       |        |        |        |        |
| PHI     |        |       |        |        |        |        |        |       |        |        |       |        |        |        |        |
| .000    | .0168  | .0236 | .0142  | -.0432 | -.1206 | -.1763 | -.2179 |       | .2947  | .2557  |       |        |        |        |        |
| 40.000  | .0048  | .0074 | -.0074 | -.0361 | -.1291 | -.0829 | -.2016 |       | .2222  | .1385  |       |        |        |        |        |

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

PAGE 435

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8828)

ALPHA ( 2 ) = -.027 BETA ( 2 ) = .1'

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |       |        |        |        |        |        |        |
| 70.000  | -.0037 | -.1107 | -.1190 | .1729 | .0254  | -.0933 | -.2500 |        |        |        |
| 90.000  | .0246  | -.0407 | .0835  | .1330 | -.0192 | -.0888 | -.1567 |        |        |        |
| 105.000 |        |        | .2071  | .1220 | -.0909 | -.1580 | -.1908 |        |        |        |
| 110.000 |        |        |        |       |        |        |        | -.3427 |        |        |
| 120.000 | .0375  | .0328  | .2962  | .1798 | -.0800 | -.1838 | -.2203 | -.2873 |        |        |
| 135.000 |        |        | .3296  | .3738 | .0029  | -.0912 | -.1228 |        |        |        |
| 150.000 | .0276  | .0743  | .3459  | .3945 | .0641  | -.0158 | -.0933 |        |        |        |
| 165.000 | .0236  |        | .3631  |       | .2896  | .0580  | -.3507 |        |        |        |
| 180.000 | .0195  | .0818  | .3785  | .4809 |        |        |        |        |        |        |

ALPHA ( 2 ) = -.032 BETA ( 3 ) = 4.246 MACH = 1.2459 Q = 599.80 P = 552.04 RN/L = 3.0182

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .3460 | .0700 | .1120  | .1590 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |        |       |        |        |        |        |        |        |        |       |
| 20.000  | 1.4029 | .7444 | .2985 | .1563 | .1077 | -.0033 |       | -.0020 | .0209  | .0240  | -.0043 | -.0248 | -.0637 | -.0594 |       |
| 40.000  |        |       | .2966 | .1430 | .0768 | -.0127 |       | .0070  | .0103  | -.0128 | -.0176 | -.0394 | -.0804 | -.0328 |       |
| 55.000  |        |       | .3746 | .1541 | .0989 | .0127  |       | .0930  | .0171  | .0143  | -.3504 | -.2248 | -.1716 | -.0488 |       |
| 70.000  |        |       | .4336 | .1939 | .1405 | .0542  |       | .1182  | .0143  | -.1034 | -.3613 | -.3300 | -.1678 | -.0427 |       |
| 90.000  |        | .6102 | .4673 | .2153 | .1425 | .0879  |       | .1367  | -.1263 | -.3563 | -.5326 | -.1702 | -.0516 |        |       |
| 120.000 |        |       | .5058 | .2571 | .1406 | .1195  |       | .3118  | -.3106 | -.4370 | -.2654 | -.2284 | -.0632 |        |       |
| 140.000 |        |       | .5602 | .3723 | .2177 | .3196  |       | .7463  | -.3742 |        |        |        |        |        |       |
| 150.000 |        |       | .5897 | .4722 | .3285 | .4394  |       | .4469  |        |        |        |        |        |        |       |
| 162.000 |        |       |       |       |       |        |       | .5384  | -.3325 | -.4731 | -.241  | -.2232 | -.0653 |        |       |
| 165.000 |        |       |       |       |       |        |       |        |        |        |        |        |        |        |       |
| 169.000 |        |       |       |       |       |        |       |        |        |        |        |        |        |        |       |
| 174.000 |        |       |       |       |       |        |       |        |        |        |        |        |        |        |       |
| 180.000 | 1.4029 | .8496 | .6194 | .5064 | .3954 | .5073  | .9413 | .8682  | -.4368 | -.4129 | -.2359 | -.2018 | -.0801 |        |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210  | .9600 | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |

PHI

|         |        |        |        |        |        |        |        |        |       |       |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--|--|--|--|--|
| .000    | .0052  | .0266  | .0118  | -.0444 | -.1206 | -.1767 | -.2250 |        | .2717 | .2379 |  |  |  |  |  |
| 40.000  | .0271  |        | .0181  | -.0317 | -.1267 | -.0847 | -.2054 |        | .2247 | .1292 |  |  |  |  |  |
| 70.000  | -.0066 | -.1156 | -.0573 | .1678  | -.0012 | -.1254 | -.2794 |        |       |       |  |  |  |  |  |
| 90.000  | .0261  | -.0460 | .0875  | .1276  | .0634  | -.1319 | -.1910 |        |       |       |  |  |  |  |  |
| 105.000 |        |        | .2049  | .1181  | -.1430 | -.1996 | -.2308 |        |       |       |  |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        | -.3675 |       |       |  |  |  |  |  |
| 120.000 | .0388  | .0412  | .2485  | .0218  | -.1677 | -.2833 | -.3201 | -.3408 |       |       |  |  |  |  |  |
| 135.000 |        |        | .3266  | .3361  | -.0759 | -.1674 | -.2093 |        |       |       |  |  |  |  |  |
| 150.000 | .0165  | .0985  | .3476  | .3444  | .0233  | -.1005 | -.1829 |        |       |       |  |  |  |  |  |

(XEBBER)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = -.032 BETA ( 3 ) = 4.246

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .6520 .7260 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI  
165.000 .0059 .3527 .2158 -.0094 -.3866  
180.000 -.0008 .1066 .3622 .3868

ALPHA ( 3 ) = 3.922 BETA ( 1 ) = -3.869 MACH = 1.2454 Q = 599.82 P = 952.51 RN/L = 3.0214

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0060 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI  
000 1.4012 .8826 .4172 .2744 .1649 .0822 .0589 .0490 .0639 .0385 .0283 -.0154 -.0182  
20.000 .4592 .2858 .1590 .0822 .0578 .0318 .0578 .0318 .0578 .0318 .0578 .0318 .0578  
40.000 .6038 .3482 .2231 .1327 .1103 .0359 .0294 .0089 .0471 -.0196 .0004  
55.000 .6774 .4335 .3252 .2261 .2176 .1491 .1668 .1200 .2225 -.0807 -.0782 -.1069  
70.000 .6966 .4484 .3266 .2548 .2480 .1868 .1668 .1200 .2192 -.1366 -.1321 -.1011  
90.000 .6887 .4595 .3249 .2848 .2933 .2933 .2933 .0960 .2008 -.4069 -.2767 -.1729  
120.000 .6550 .4693 .3178 .3796 .5055 .0233 -.2402 -.5098 -.3892 -.1934 -.1031  
140.007 .5689 .4345 .2691 .4112 .8781 .6126  
150.000 .5689 .4345 .2691 .4112 .8781 .6126  
151.000 .6470  
162.000 .9073  
165.000 .8276  
169.000 .9519  
174.000 .9073  
180.000 .8276

X/LB .6520 .7260 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

## PHI

000 .0389 .0728 .0877 .0346 -.0383 -.0584 -.1176 .3903 .3206  
40.000 .0518 .0712 .0712 .0398 -.0537 .0409 -.1491 .3943 .2358  
70.000 -.0574 -.1865 -.2487 -.0195 -.0066 -.1032 -.2484  
90.000 -.0260 -.1357 -.1917 .0530 .0291 .1126 .1879  
105.000 .0049 .1193 .1193 .1193 .1193 .1193 .1193  
110.000 .0784 -.0938 .2286 .1537 -.0902 -.2237 -.1869  
120.000 .2641 .2643 .2643 .2643 .2643 .2643 .2643  
135.000 .0500 .0500 .0500 .0500 .0500 .0500 .0500  
150.000 -.0192 .0500 .2643 .2643 .2643 .2643 .2643  
165.000 -.0100 .2714 .2714 .2714 .2714 .2714 .2714  
180.000 -.0006 .1061 .2612 .3173

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB29)

ALPHA ( 3 ) = 3.922 BETA ( 2 ) = .180 MACH = 1.2454 Q = 599.82 P = 552.51 RN/L = 3.0214

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460 | .0700  | .1120  | .1580  | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|--------|--------|-------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|
| PHI     | .000   | .8853  | .4163  | .2739 | .1873  |        |        | .0541 | .0721  | .0521  | .0709  | .0455  | .0254  | -.0090 | -.0137 |
| 20.000  | 1.4062 |        | .4347  | .2788 | .1623  | .0791  |        | .0888 | .0521  | .0570  | .0353  | .0127  | .0252  | -.0229 | -.0083 |
| 40.000  |        |        | .5307  | .2976 | .2045  | .1028  |        | .1103 | .1056  | .1056  |        |        |        |        |        |
| 55.000  |        |        | .5708  | .3462 | .2479  | .1426  |        | .1747 | .1092  | .1092  |        |        |        |        |        |
| 70.000  |        |        | .5762  | .3436 | .2366  | .1612  |        | .1947 | .0426  | .0426  |        |        |        |        |        |
| 90.000  | .7235  |        | .5657  | .3575 | .2255  | .1836  |        | .2305 | -.0002 | -.0002 |        |        |        |        |        |
| 120.000 |        |        | .5814  | .4018 | .2427  | .3140  |        | .4331 | -.0895 | -.0895 |        |        |        |        |        |
| 140.000 |        |        |        |       |        |        |        |       | -.3321 | -.3321 |        |        |        |        |        |
| 150.000 |        |        | .5401  | .4235 | .2477  | .3989  |        | .7885 | .5319  | .5319  |        |        |        |        |        |
| 151.000 |        |        |        |       |        |        |        |       | .5823  | .5823  |        |        |        |        |        |
| 162.000 |        |        |        |       |        |        |        |       |        |        |        |        |        |        |        |
| 165.000 |        |        |        |       |        |        |        |       |        |        |        |        |        |        |        |
| 169.000 |        |        |        |       |        |        |        |       |        |        |        |        |        |        |        |
| 174.000 |        |        |        |       |        |        |        |       |        |        |        |        |        |        |        |
| 180.000 | 1.4062 | .7353  | .5038  | .3997 | .2809  | .4279  | .9322  | .8753 | -.3717 | -.3717 | -.4411 | -.2896 | -.2161 | -.0496 |        |
| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990 |        |        |        |        |        |        |        |
| PHI     | .0363  | .0823  | .0938  | .0374 | -.0372 | -.0994 | -.1372 |       | .3967  | .3159  |        |        |        |        |        |
| 40.000  | .0601  |        | .0976  | .0525 | -.0518 | .0129  | -.1429 |       | .3334  | .2062  |        |        |        |        |        |
| 70.000  | -.0677 | -.1869 | -.2444 | .0103 | -.0603 | -.1436 | -.2751 |       |        |        |        |        |        |        |        |
| 90.000  | -.0253 | -.1303 | -.0556 | .0324 | -.1027 | -.1513 | -.2043 |       |        |        |        |        |        |        |        |
| 105.000 |        |        | .1245  | .0628 | -.2056 | -.2171 | -.2472 |       |        |        |        |        |        |        |        |
| 110.000 |        |        |        |       |        |        |        |       |        |        |        |        |        |        |        |
| 120.000 | -.0121 | -.0327 | .2162  | .0961 | -.1138 | -.2591 | -.2573 | .3701 |        |        |        |        |        |        |        |
| 135.000 |        |        | .2365  | .2941 | -.0418 | -.1488 | -.1974 | .3250 |        |        |        |        |        |        |        |
| 150.000 | .0132  | .0299  | .2434  | .4110 | .0249  | -.0720 | -.1540 |       |        |        |        |        |        |        |        |
| 165.000 | .0158  |        | .2608  |       | .2286  | .0045  | -.3567 |       |        |        |        |        |        |        |        |
| 180.000 | .0091  | .0389  | .2802  | .4515 |        |        |        |       |        |        |        |        |        |        |        |

ALPHA ( 3 ) = 3.925 BETA ( 3 ) = 4.237 MACH = 1.2454 Q = 599.82 P = 552.51 RN/L = 3.0214

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510 | .3010 | .3780 | .4970  | .5740  |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|--------|--------|
| PHI     | .000   | .8753 | .4137 | .2835 | .1855 |       |       | .0424 | .0460  | .0392  | .0642 | .0500 | .0293 | -.0158 | -.0215 |
| 20.000  | 1.3919 |       | .4042 | .2572 | .1452 | .0530 |       | .0365 | .0392  | .0398  | .0477 | .0085 | .0069 | -.0446 | -.0287 |
| 40.000  |        |       | .4502 | .2560 | .1716 | .0844 |       | .0735 | .0654  | .0654  |       |       |       |        |        |
| 55.000  |        |       | .4656 | .2494 | .1796 | .0624 |       | .1233 | .0654  | .0654  |       |       |       |        |        |
| 70.000  |        |       | .4686 | .2390 | .1567 | .0766 |       | .1433 | .0628  | .0628  |       |       |       |        |        |
| 90.000  | .5729  |       | .4859 | .2565 | .1461 | .0818 |       | .1699 | -.0331 | -.0331 |       |       |       |        |        |
| 120.000 |        |       | .5002 | .3249 | .1641 | .2324 |       | .3390 | -.0947 | -.0947 |       |       |       |        |        |



DATE 10 FEB 76 TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (XE8829)

| ALPHA ( 4 ) = 7.990 BETA ( 1 ) = -3.870 |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|---|--------|-----------------------|--------|--------|--------|--------|--------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| SECTION ( 1 ) ORBITER FUSELAGE          |        | DEPENDENT VARIABLE CP |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
| X/LB                                    |        | .0000                 | .0080  | .0230  | .0460  | .0700  | .1120  | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
| PHI                                     |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
| 180.000                                 | 1.3698 | .6013                 | .3634  | .3184  | .1632  | .2429  |        | .7910 |       |        | -.5162 | -.5114 | -.3241 | -.2257 | -.0647 |       |
| X/LB                                    |        | .6520                 | .7290  | .7790  | .8210  | .8790  | .9210  | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI                                     |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
| 40.000                                  | .1065  | .1374                 | .1744  | .1283  | .0507  | .0002  | -.0478 |       |       | .4971  | .3830  |        |        |        |        |       |
| 70.000                                  | .1317  | .1789                 | .1390  | .0316  | .1014  | -.0916 |        |       |       | .4695  | .2712  |        |        |        |        |       |
| 90.000                                  | -.1390 | -.2538                | -.3241 | -.1448 | -.0859 | -.1474 | -.2612 |       |       |        |        |        |        |        |        |       |
| 105.000                                 | -.0977 | -.2006                | -.2774 | -.0200 | -.1658 | -.1743 | -.2140 |       |       |        |        |        |        |        |        |       |
| 110.000                                 |        |                       | -.0678 | .0409  | -.2162 | -.2957 | -.2541 |       |       |        |        |        |        |        |        |       |
| 120.000                                 | -.1663 | -.1654                | .1091  | .0729  | -.1165 | -.2489 | -.2807 |       |       |        |        |        |        |        |        |       |
| 135.000                                 |        |                       | .0876  | .1666  | -.0859 | -.1516 | -.1806 |       |       |        |        |        |        |        |        |       |
| 150.000                                 | -.0760 | -.0368                | .0854  | .2149  | .0201  | -.0500 | -.1541 |       |       |        |        |        |        |        |        |       |
| 65.000                                  | -.0406 |                       | .1187  | .2487  | .0679  | -.3584 |        |       |       |        |        |        |        |        |        |       |
| 130.000                                 | -.0328 | .0000                 | .1832  | .4309  |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |
|   |        |                       |        |        |        |        |        |       |       |        |        |        |        |        |        |       |

|   |        |        |       |       |       |        |        |       |        |        |        |        |        |        |        |
|---|--------|--------|-------|-------|-------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|
| ALPHA ( 4 ) = 7.994 BETA ( 2 ) = .176 MACH = 1.2446 Q = 599.59 P = 552.98 RN/L = 3.0205 |        |        |       |       |       |        |        |       |        |        |        |        |        |        |        |
| SECTION ( 1 ) ORBITER FUSELAGE  |        |        |       |       |       |        |        |       |        |        |        |        |        |        |        |
| X/LB  | .0000  | .0080  | .0230 | .0460 | .0700 | .1120  | .1580  | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
| PHI   | 1.3729 | 1.0096 | .5473 | .3850 | .2763 |        |        | .1167 | .1092  | .1010  | .1033  | .0915  | .0533  | .0547  | .0536  |
| 20.000  |        |        | .5634 | .3818 | .2440 | .1542  |        | .1150 | .0993  | .1045  | .1097  | .0757  | .0849  | .0384  |        |
| 40.000  |        |        | .6176 | .4016 | .2874 | .1845  |        | .1520 | .1350  | .1350  | .2204  | -.1359 | -.1267 | -.2030 |        |
| 55.000  |        |        | .6047 | .3827 | .2827 | .1598  |        | .1688 | .1466  | .1466  | -.2499 | -.1718 | -.1869 | -.1758 |        |
| 70.000  |        |        | .5693 | .3509 | .2433 | .1556  |        | .1959 | .1012  | .1012  | -.2690 | -.4522 | -.3804 | -.1707 |        |
| 90.000  |        | .6728  | .5520 | .3469 | .2228 | .1502  |        | .2386 | .0271  | .0271  | -.0740 | -.5592 | -.4257 | -.1975 | -.0703 |
| 120.000   |        |        | .5020 | .3365 | .1959 |        | .4410  |       | -.3304 | -.3304 |        |        |        |        |        |
| 140.000   |        |        | .4286 | .3403 | .1457 | .2278  |        | .7651 | .5261  |        |        |        |        |        |        |
| 150.000   |        |        |       |       |       |        |        |       | .5698  |        |        |        |        |        |        |
| 151.000   |        |        |       |       |       |        |        |       |        | -.4131 | -.4848 | -.3313 | -.2077 | -.0488 |        |
| 162.000   |        |        |       |       |       |        |        |       |        |        |        |        |        |        |        |
| 165.000   |        |        |       |       |       |        |        |       |        |        |        |        |        |        |        |
| 169.000   |        |        |       |       |       |        |        |       |        |        |        |        |        |        |        |
| 174.000   |        |        |       |       |       |        |        |       |        |        |        |        |        |        |        |
| 180.000   | 1.3729 | .5870  | .3874 | .3068 | .1629 | .2485  | .8568  | .8172 |        | -.5479 | -.5528 | -.3007 | -.2209 | -.0415 |        |
| X/LB  | .6520  | .7290  | .7790 | .8210 | .8790 | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |        |        |        |        |        |
| PHI   |        |        |       |       |       |        |        |       |        |        |        |        |        |        |        |
| 40.000  | .0948  | .1467  | .1939 | .1407 | .0544 | -.0102 | -.0541 |       | .4875  | .3804  |        |        |        |        |        |
| 1203  |        |        | .2038 | .1499 | .0388 | .0698  | -.0728 |       | .4190  | .2532  |        |        |        |        |        |

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TABULATED PRESSURE DATA - 0A148 ( AVES 11-073-1 )

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AVES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8828)

ALPHA ( 4 ) = 7.99% BETA ( 2 ) = .176

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9890  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| 70.000  | -.1363 | -.2458 | -.3180 | -.0995 | -.1124 | -.1866 | -.2674 |        |        |        |
| 90.000  | -.0790 | -.1937 | -.2619 | -.0116 | -.2246 | -.2026 | -.2356 |        |        |        |
| 105.000 |        |        | -.0330 | .0602  | -.2926 | -.3179 | -.2868 |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.3914 |        |        |
| 120.000 | -.0670 | -.0883 | .1139  | .0407  | -.1600 | -.2878 | -.3596 | -.3435 |        |        |
| 135.000 |        |        | .1137  | .2362  | -.0869 | -.1956 | -.2469 |        |        |        |
| 150.000 | -.0179 | -.0337 | .1606  | .4445  | -.0204 | -.1269 | -.1937 |        |        |        |
| 165.000 | -.0134 | .1999  | .1999  | .1762  | -.0586 | -.3732 |        |        |        |        |
| 180.000 | -.0100 | -.0001 | .2284  | .4826  |        |        |        |        |        |        |

ALPHA ( 4 ) = 7.99% BETA ( 3 ) = 4.240 MACH = 1.2446 Q = 598.59 P = 552.98 RN/L = 3.0205

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 20.000  | 1.3616 | .9965 | .5388 | .3888 | .2702 |       |       | .1113 | .0900  | .0987  | .1005  | .0940  | .0499  | .0435  |       |
| 40.000  |        |       | .5211 | .3529 | .2247 | .1228 |       | .0945 | .0711  |        |        |        |        |        |       |
| 50.000  |        |       | .5240 | .3352 | .2332 | .1272 |       | .1023 | .0591  | .0867  | .0624  | .0596  | .0070  | .0351  |       |
| 55.000  |        |       | .4876 | .2775 | .1950 | .0667 |       | .0745 | .0940  |        |        |        |        |        |       |
| 70.000  |        |       | .4593 | .2421 | .1568 | .0676 |       | .1320 | .1058  | -.2528 | -.1841 | -.1864 | -.2086 |        |       |
| 90.000  | .5223  |       | .4518 | .2414 | .1433 | .0679 |       | .1853 | .0279  | -.2878 | -.2263 | -.2352 | -.1639 |        |       |
| 120.000 |        |       | .4296 | .2685 | .1351 | .1294 |       | .3646 | -.0552 | -.3330 | -.4935 | -.2272 | -.0975 |        |       |
| 140.000 |        |       |       |       |       |       |       |       | -.1831 |        |        |        |        |        |       |
| 150.000 |        |       | .3928 | .3095 | .1153 | .1818 |       | .6993 | -.4165 | -.5622 | -.3841 | -.1883 | -.0475 |        |       |
| 151.000 |        |       |       |       |       |       |       |       | .4361  |        |        |        |        |        |       |
| 162.000 |        |       |       |       |       |       |       |       | .4872  |        |        |        |        |        |       |
| 165.000 |        |       |       |       |       |       |       |       |        | -.4241 | -.5372 | -.3080 | -.2263 | -.0466 |       |
| 174.000 |        |       |       |       |       |       |       | .8010 |        |        |        |        |        |        |       |
| 180.000 | 1.3616 | .5685 | .3824 | .3357 | .1667 | .2181 | .8363 | .8201 | -.5338 | -.4938 | -.3172 | -.2314 | -.0621 |        |       |

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

## PHI

|         |        |        |        |        |        |        |        |        |       |       |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--|--|--|--|--|
| 40.000  | -.0832 | .1516  | .1851  | .1344  | .0504  | -.0252 | -.0786 |        |       |       |  |  |  |  |  |
| 70.000  | -.1030 | -.2904 | .2091  | .1497  | .0386  | .0735  | -.0646 |        | .4877 | .3867 |  |  |  |  |  |
| 90.000  | -.1164 | -.1836 | -.3142 | -.1004 | -.1465 | -.2437 | -.3079 |        | .3878 | .2354 |  |  |  |  |  |
| 105.000 | -.0593 | -.1836 | -.1400 | -.0434 | -.2301 | -.1943 | -.2779 |        |       |       |  |  |  |  |  |
| 110.000 |        |        | .0231  | -.0121 | -.3583 | -.3123 | -.3228 |        |       |       |  |  |  |  |  |
| 120.000 |        |        |        |        |        |        |        | -.4306 |       |       |  |  |  |  |  |
| 135.000 | -.0163 | -.0685 | .0896  | -.0917 | -.2157 | -.3571 | -.4562 | -.3885 |       |       |  |  |  |  |  |
| 150.000 | -.0107 | -.0048 | .1907  | .2436  | -.1482 | -.2395 | -.2685 |        |       |       |  |  |  |  |  |
|         |        |        | .2308  | .3425  | -.0822 | -.2037 | -.2602 |        |       |       |  |  |  |  |  |

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TABULATED PRESSURE DATA - QAL48 ( AMES 11-073-1 )

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(XEB829)

AMES 11-07310A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 7.996 BETA ( 3 ) = 4.240

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CF

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

135.000 -.0187 .1822 .1198 -.1358 -.4096  
180.000 -.0394 .0042 .1549 .3921

ALPHA ( 5 ) = 11.923 BETA ( 1 ) = -3.851 MACH = 1.2447 Q = 569.71 P = 952.98 RW/L = 3.0237

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1560 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.3163 1.1125 .6636 .4823 .3593 .1906 .1648 .1417 .1403 .1638 .1235 .1383  
20.000 .7108 .5051 .3553 .2378 .2050 .1565 .1565 .1565 .1565 .1565 .1565 .1565  
40.000 .7776 .5457 .4126 .3032 .2460 .1690 .1690 .1690 .1690 .1690 .1690 .1690  
55.000 .7335 .5084 .3862 .2943 .1970 .1731 .1731 .1731 .1731 .1731 .1731 .1731  
70.000 .6622 .4480 .3147 .2399 .1911 .2078 .2078 .2078 .2078 .2078 .2078 .2078  
90.000 .6011 .4011 .2751 .2015 .1911 .2420 .2420 .2420 .2420 .2420 .2420 .2420  
120.000 .4739 .2923 .1746 .1739 .4635 .1240 .1240 .1240 .1240 .1240 .1240 .1240  
140.000 .3335 .2251 .1111 .1399 .8404 .0331 .0331 .0331 .0331 .0331 .0331 .0331  
150.000 .3335 .2251 .1111 .1399 .8404 .0331 .0331 .0331 .0331 .0331 .0331 .0331  
151.000 .3335 .2251 .1111 .1399 .8404 .0331 .0331 .0331 .0331 .0331 .0331 .0331  
162.000 .3335 .2251 .1111 .1399 .8404 .0331 .0331 .0331 .0331 .0331 .0331 .0331  
165.000 .3335 .2251 .1111 .1399 .8404 .0331 .0331 .0331 .0331 .0331 .0331 .0331  
169.000 .3335 .2251 .1111 .1399 .8404 .0331 .0331 .0331 .0331 .0331 .0331 .0331  
174.000 .3335 .2251 .1111 .1399 .8404 .0331 .0331 .0331 .0331 .0331 .0331 .0331  
180.000 .3335 .2251 .1111 .1399 .8404 .0331 .0331 .0331 .0331 .0331 .0331 .0331

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .1900 .2744 .2891 .2121 .1224 .0937 .0028 .5812 .5812 .5812 .5812 .5812  
40.000 .2249 .3174 .2310 .2310 .1078 .1628 .0341 .5812 .5812 .5812 .5812 .5812  
70.000 .2573 .3862 .4149 .2266 .2234 .2136 .2571 .5812 .5812 .5812 .5812 .5812  
90.000 .1693 .2851 .3580 .0932 .2574 .2366 .2679 .5812 .5812 .5812 .5812 .5812  
105.000 .2886 .0083 .2934 .2934 .2934 .2934 .2934 .5812 .5812 .5812 .5812 .5812  
110.000 .2886 .0083 .2934 .2934 .2934 .2934 .2934 .5812 .5812 .5812 .5812 .5812  
120.000 .0090 .0090 .0540 .0540 .1851 .2855 .3299 .3999 .3999 .3999 .3999 .3999  
135.000 .0023 .0023 .1786 .1786 .1475 .1883 .2293 .3999 .3999 .3999 .3999 .3999  
150.000 .1101 .2099 .3116 .3116 .0809 .1759 .2636 .3999 .3999 .3999 .3999 .3999  
165.000 .0681 .0484 .0484 .0484 .1774 .0218 .3817 .3999 .3999 .3999 .3999 .3999  
180.000 .0500 .0464 .0776 .4533 .1774 .0218 .3817 .3999 .3999 .3999 .3999 .3999

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TABULATED PRESSURE DATA - 0A148 (AVES 11-073-1)

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ALPHA ( 5 ) = 11.934 BETA ( 2 ) = .177 MACH = 1.2447 Q = 599.71 P = 552.98 RVL = 3.0237  
 (XE8829)

## SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230  | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|-------|--------|--------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|-------|
| PHI     | .000  | 1.3210 | 1.1184 | .6672 | .4933 | .3699 | .2210 | .2020 | .1675  | .1335  | .1529  | .1634  | .1276  | .1396 |       |
| 20.000  |       |        |        | .6797 | .4826 | .3393 | .2417 | .1963 | .1514  |        |        |        |        |       |       |
| 40.000  |       |        |        | .6863 | .4840 | .3579 | .2417 | .1963 | .1191  | .1505  | .1323  | .1469  | .1078  | .1387 |       |
| 55.000  |       |        |        | .6099 | .3991 | .2893 | .1510 | .1117 | .1238  |        |        |        |        |       |       |
| 70.000  |       |        |        | .5403 | .3369 | .2250 | .1548 | .1183 | .1639  | -.1753 | -.1230 | -.1284 | -.2241 |       |       |
| 90.000  | .6094 |        |        | .5000 | .3044 | .1970 | .1227 | .1899 | .1352  | -.2246 | -.1484 | -.1826 | -.2564 |       |       |
| 120.000 |       |        |        | .4085 | .2464 | .1338 | .1265 | .4214 | .0484  | -.2678 | -.4348 | -.5548 | -.2311 |       |       |
| 140.000 |       |        |        |       |       |       |       |       | -.0632 |        |        |        |        |       |       |
| 150.000 |       |        |        | .3128 | .2493 | .0881 | .1279 | .7406 | -.3189 | -.5933 | -.4761 | -.2225 | -.0898 |       |       |
| 151.000 |       |        |        |       |       |       |       | .5166 |        |        |        |        |        |       |       |
| 162.000 |       |        |        |       |       |       |       | .5466 |        |        |        |        |        |       |       |
| 165.000 |       |        |        |       |       |       |       |       | -.4489 | -.5190 | -.3620 | -.1991 | -.0495 |       |       |
| 169.000 |       |        |        |       |       |       |       |       |        |        |        |        |        |       |       |
| 174.000 |       |        |        |       |       |       |       |       |        |        |        |        |        |       |       |
| 180.000 |       |        |        |       |       |       |       |       |        |        |        |        |        |       |       |

| X/LB    | .13210 | .4370  | .2623  | .2344  | .0987  | .1293  | .7823  | .7750  | .9950  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     | .000   | .1858  | .3079  | .2969  | .2164  | .1250  | .0954  | .0025  |        |        |        |
| 40.000  |        | .2056  |        | .3190  | .2317  | .1095  | .1947  | -.0174 | .5823  | .4231  | .2780  |
| 70.000  |        | -.2404 | -.3766 | -.4231 | -.2027 | -.2625 | -.2421 |        |        |        |        |
| 90.000  |        | -.1405 | -.2588 | -.3428 | -.1087 | -.3088 | -.2813 | -.3003 |        |        |        |
| 105.000 |        |        |        | -.2001 | .0023  | -.3593 | -.4276 | -.3182 |        |        |        |
| 110.000 |        |        |        |        |        |        |        |        | -.4408 |        |        |
| 120.000 |        | -.0882 | -.1322 | .0219  | -.0303 | -.2080 | -.3181 | -.3968 |        |        |        |
| 135.000 |        |        |        | .0382  | .1624  | -.1375 | -.2274 | -.2908 |        |        |        |
| 150.000 |        | -.0605 | -.0936 | .0297  | .4216  | -.0710 | -.1738 | -.2248 |        |        |        |
| 165.000 |        | -.0367 |        | .0596  |        | .1635  | -.1019 | -.3978 |        |        |        |
| 180.000 |        | -.0320 | -.0240 | .1037  |        |        |        |        |        |        |        |

ALPHA ( 5 ) = 11.927 BETA ( 3 ) = 4.253 MACH = 1.2447 Q = 599.71 P = 552.98 RVL = 3.0237

## SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230  | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|-------|--------|--------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|-------|
| PHI     | .000  | 1.3097 | 1.1052 | .6577 | .4890 | .3561 | .2210 | .1882 | .1546  | .1364  | .1443  | .1691  | .1222  | .1328 |       |
| 20.000  |       |        |        | .6310 | .4480 | .3075 | .1951 | .1614 | .1222  |        |        |        |        |       |       |
| 40.000  |       |        |        | .5838 | .4023 | .2924 | .1660 | .1362 | .0495  | .1059  | .1033  | .1172  | .0720  | .1061 |       |
| 55.000  |       |        |        | .4868 | .2806 | .1896 | .0454 | .0343 | .0580  |        |        |        |        |       |       |
| 70.000  |       |        |        | .4285 | .2297 | .1401 | .0701 | .0609 | .1118  | -.2059 | -.1752 | -.1950 | -.3006 |       |       |
| 90.000  | .4598 |        |        | .4044 | .2090 | .1227 | .0473 | .1616 | .0762  | -.2672 | -.1957 | -.2374 | -.2519 |       |       |
| 120.000 |       |        |        | .3487 | .1934 | .0972 | .0852 | .3750 | -.0232 | -.3260 | -.4699 | -.3560 | -.1406 |       |       |





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**(05885X)**

JAMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 1 ) = -3.095    BETA ( 2 ) = 190    MARCH : 1.0997    D = 600.21    P = 703.06    RM/L = 3.1508

DEPENDENT VARIABLE CP

|  | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 | 2062 | 2063 | 2064 | 2065 | 2066 | 2067 | 2068 | 2069 | 2070 | 2071 | 2072 | 2073 | 2074 | 2075 | 2076 | 2077 | 2078 | 2079 | 2080 | 2081 | 2082 | 2083 | 2084 | 2085 | 2086 | 2087 | 2088 | 2089 | 2090 | 2091 | 2092 | 2093 | 2094 | 2095 | 2096 | 2097 | 2098 | 2099 | 2100 | 2101 | 2102 | 2103 | 2104 | 2105 | 2106 | 2107 | 2108 | 2109 | 2110 | 2111 | 2112 | 2113 | 2114 | 2115 | 2116 | 2117 | 2118 | 2119 | 2120 | 2121 | 2122 | 2123 | 2124 | 2125 | 2126 | 2127 | 2128 | 2129 | 2130 | 2131 | 2132 | 2133 | 2134 | 2135 | 2136 | 2137 | 2138 | 2139 | 2140 | 2141 | 2142 | 2143 | 2144 | 2145 | 2146 | 2147 | 2148 | 2149 | 2150 | 2151 | 2152 | 2153 | 2154 | 2155 | 2156 | 2157 | 2158 | 2159 | 2160 | 2161 | 2162 | 2163 | 2164 | 2165 | 2166 | 2167 | 2168 | 2169 | 2170 | 2171 | 2172 | 2173 | 2174 | 2175 | 2176 | 2177 | 2178 | 2179 | 2180 | 2181 | 2182 | 2183 | 2184 | 2185 | 2186 | 2187 | 2188 | 2189 | 2190 | 2191 | 2192 | 2193 | 2194 | 2195 | 2196 | 2197 | 2198 | 2199 | 2200 | 2201 | 2202 | 2203 | 2204 | 2205 | 2206 | 2207 | 2208 | 2209 | 2210 | 2211 | 2212 | 2213 | 2214 | 2215 | 2216 | 2217 | 2218 | 2219 | 2220 | 2221 | 2222 | 2223 | 2224 | 2225 | 2226 | 2227 | 2228 | 2229 | 2230 | 2231 | 2232 | 2233 | 2234 | 2235 | 2236 | 2237 | 2238 | 2239 | 2240 | 2241 | 2242 | 2243 | 2244 | 2245 | 2246 | 2247 | 2248 | 2249 | 2250 | 2251 | 2252 | 2253 | 2254 | 2255 | 2256 | 2257 | 2258 | 2259 | 2260 | 2261 | 2262 | 2263 | 2264 | 2265 | 2266 | 2267 | 2268 | 2269 | 2270 | 2271 | 2272 | 2273 | 2274 | 2275 | 2276 | 2277 | 2278 | 2279 | 2280 | 2281 | 2282 | 2283 | 2284 | 2285 | 2286 | 2287 | 2288 | 2289 | 2290 | 2291 | 2292 | 2293 | 2294 | 2295 | 2296 | 2297 | 2298 | 2299 | 2300 | 2301 | 2302 | 2303 | 2304 | 2305 | 2306 | 2307 | 2308 | 2309 | 2310 | 2311 | 2312 | 2313 | 2314 | 2315 | 2316 | 2317 | 2318 | 2319 | 2320 | 2321 | 2322 | 2323 | 2324 | 2325 | 2326 | 2327 | 2328 | 2329 | 2330 | 2331 | 2332 | 2333 | 2334 | 2335 | 2336 | 2337 | 2338 | 2339 | 2340 | 2341 | 2342 | 2343 | 2344 | 2345 | 2346 | 2347 | 2348 | 2349 | 2350 | 2351 | 2352 | 2353 | 2354 | 2355 | 2356 | 2357 | 2358 | 2359 | 2360 | 2361 | 2362 | 2363 | 2364 | 2365 | 2366 | 2367 | 2368 | 2369 | 2370 | 2371 | 2372 | 2373 | 2374 | 2375 | 2376 | 2377 | 2378 | 2379 | 2380 | 2381 | 2382 | 2383 | 2384 | 2385 | 2386 | 2387 | 2388 | 2389 | 2390 | 2391 | 2392 | 2393 | 2394 | 2395 | 2396 | 2397 | 2398 | 2399 | 2400 | 2401 | 2402 | 2403 | 2404 | 2405 | 2406 | 2407 | 2408 | 2409 | 2410 | 2411 | 2412 | 2413 | 2414 | 2415 | 2416 | 2417 | 2418 | 2419 | 2420 | 2421 | 2422 | 2 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|

| PHI     | 1.3174 | .5519 | .1388 | .0818 | .0191  | -.0434 | -.0113 | -.0954 | -.0131 | -.0488 | -.0876 | -.1423 | -.1273 | -.0942 | -.0230  |
|---------|--------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| .000    |        |       | .1553 | .0663 | -.0113 | -.0434 | -.0113 | -.0854 | -.0131 | -.0488 | -.0876 | -.1423 | -.1273 | -.0942 | -.0230  |
| 20.000  |        |       | .2951 | .0772 | -.0092 | -.0419 | -.0092 | -.1052 | -.0152 | -.1806 | -.1927 | -.1910 | -.1440 | -.1134 | -.00229 |
| 40.000  |        |       | .4270 | .1985 | .1239  | .0518  | .1239  | -.1079 | -.0515 | -.0871 | -.4713 | -.2457 | -.1157 | -.0237 |         |
| 55.000  |        |       | .5149 | .2808 | .2074  | .1662  | .2074  | -.0515 | -.0714 | -.1983 | -.4305 | -.4057 | -.1108 | -.0257 |         |
| 70.000  |        |       | .5869 | .3541 | .2784  | .2014  | .2784  | -.0714 | -.2937 | -.1605 | -.3981 | -.6216 | -.1523 | -.0304 |         |
| 90.000  | .7382  |       | .6832 | .5068 | .3848  | .4096  |        | -.2361 |        | -.4213 | -.5131 | -.2825 | -.2118 | -.0171 |         |
| 120.000 |        |       |       |       |        |        |        |        | .4569  |        |        |        |        |        |         |
| 140.000 |        |       | .7285 | .6394 | .5061  | .5363  |        | .5325  |        | -.4491 | -.4517 | -.2254 | -.2269 | -.0154 |         |
| 150.000 |        |       |       |       |        |        |        |        |        |        |        |        |        |        |         |
| 151.000 |        |       |       |       |        |        |        |        |        |        |        |        |        |        |         |
| 162.000 |        |       |       |       |        |        |        |        |        |        |        |        |        |        |         |
| 165.000 |        |       |       |       |        |        |        |        |        |        |        |        |        |        |         |
| 169.000 |        |       |       |       |        |        |        |        |        |        |        |        |        |        |         |
| 174.000 |        |       |       |       |        |        |        |        |        |        |        |        |        |        |         |
| 180.000 | 1.3174 | .9642 | .7323 | .6205 | .5450  | .5835  | .9661  | .8580  | .8478  | -.4848 | -.5507 | -.2073 | -.2318 | -.0168 |         |

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| .000    | .0617  | -.0341 | -.0801 | -.1564 | -.2302 | -.2688 | -.2831 |        | .3038  | .2302  |
| 40.000  | -.0006 |        | -.0836 | -.1408 | -.2248 | -.1958 | -.3020 |        | .1732  | .0965  |
| 70.000  | .1377  | .1147  | .2571  | .3105  | .0334  | -.1497 | -.3668 |        |        |        |
| 90.000  | .1571  | .1750  | .3030  | .3186  | -.0230 | -.1451 | -.2388 |        |        |        |
| 105.000 |        |        | .3673  | .2949  | -.1092 | -.1828 | -.2528 |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.4800 |        |        |
| 120.000 | .1675  | .2448  | .4128  | .2747  | -.1847 | -.1927 | -.2482 | -.3771 |        |        |
| 135.000 |        |        | .4912  | .5240  | -.0924 | -.0981 | -.1424 |        |        |        |
| 150.000 | .1811  | .3067  | .5095  | .5765  | .0138  | -.0392 | -.1293 |        |        |        |
| 165.000 | .1892  |        | .5046  |        | .2150  | .0175  | -.4010 |        |        |        |
| 180.000 | .1852  | .3161  | .5103  | .6530  |        |        |        |        |        |        |

[illegible]

SECTION 1106B(1) FLUORIDE FLUORIDE AGE

| DATE  | TIME | LOCATION | ACTIVITY | REMARKS |
|-------|------|----------|----------|---------|
| 01/25 | 0800 | 0102     | 0103     | 0104    |
| 01/26 | 0800 | 0102     | 0103     | 0104    |
| 01/27 | 0800 | 0102     | 0103     | 0104    |
| 01/28 | 0800 | 0102     | 0103     | 0104    |
| 01/29 | 0800 | 0102     | 0103     | 0104    |
| 01/30 | 0800 | 0102     | 0103     | 0104    |
| 01/31 | 0800 | 0102     | 0103     | 0104    |
| 02/01 | 0800 | 0102     | 0103     | 0104    |
| 02/02 | 0800 | 0102     | 0103     | 0104    |
| 02/03 | 0800 | 0102     | 0103     | 0104    |
| 02/04 | 0800 | 0102     | 0103     | 0104    |
| 02/05 | 0800 | 0102     | 0103     | 0104    |
| 02/06 | 0800 | 0102     | 0103     | 0104    |
| 02/07 | 0800 | 0102     | 0103     | 0104    |
| 02/08 | 0800 | 0102     | 0103     | 0104    |
| 02/09 | 0800 | 0102     | 0103     | 0104    |
| 02/10 | 0800 | 0102     | 0103     | 0104    |
| 02/11 | 0800 | 0102     | 0103     | 0104    |
| 02/12 | 0800 | 0102     | 0103     | 0104    |
| 02/13 | 0800 | 0102     | 0103     | 0104    |
| 02/14 | 0800 | 0102     | 0103     | 0104    |
| 02/15 | 0800 | 0102     | 0103     | 0104    |
| 02/16 | 0800 | 0102     | 0103     | 0104    |
| 02/17 | 0800 | 0102     | 0103     | 0104    |
| 02/18 | 0800 | 0102     | 0103     | 0104    |
| 02/19 | 0800 | 0102     | 0103     | 0104    |
| 02/20 | 0800 | 0102     | 0103     | 0104    |
| 02/21 | 0800 | 0102     | 0103     | 0104    |
| 02/22 | 0800 | 0102     | 0103     | 0104    |
| 02/23 | 0800 | 0102     | 0103     | 0104    |
| 02/24 | 0800 | 0102     | 0103     | 0104    |
| 02/25 | 0800 | 0102     | 0103     | 0104    |
| 02/26 | 0800 | 0102     | 0103     | 0104    |
| 02/27 | 0800 | 0102     | 0103     | 0104    |
| 02/28 | 0800 | 0102     | 0103     | 0104    |
| 02/29 | 0800 | 0102     | 0103     | 0104    |

| PHI    | 1.3042 | .5338 | .1292 | .0642 | .0209  | -.0178 | -.0436 | -.0914 | -.1441 | -.1339 | -.1032 | -.0233 |
|--------|--------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| .000   |        |       |       |       |        |        |        |        |        |        |        |        |
| 20.030 |        |       | .1327 | .0654 | -.0156 | -.0190 | -.0553 |        |        |        |        |        |
| 40.000 |        |       | .2347 | .0657 | .0025  | -.0625 | -.1371 | -.1659 | -.1928 | -.1423 | -.0926 | .0328  |
| 55.000 |        |       | .3340 | .1276 | .0661  | .0281  | -.1397 |        |        |        |        |        |
| 70.000 |        |       | .4472 | .1802 | .1072  | .1802  | -.1492 | -.5247 | -.3038 | -.1164 | -.0194 |        |
| 90.000 |        | .5904 | .4742 | .2409 | .1882  | .0029  | -.3003 | -.5049 | -.4647 | -.1221 | -.0147 |        |
| 20.000 |        |       | .5817 | .4014 | .2742  | .1831  | -.2847 | -.4853 | -.6923 | -.2145 | -.0447 |        |

DATE 10 FEB 76

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AMES 11-073(0A148) -140A/B/C/R OR3 FUSELAGE

(XEB830)

ALPHA ( 1 ) = -3.992 BETA ( 3 ) = 4.268

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

X/LB

PHI

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

ALPHA ( 2 ) =

BETA ( 1 ) =

MACH =

Q =

P =

RML/L =

3.1886

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 20.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 55.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 179.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

.9395

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IXE8830.

ALPHA ( 2 ) = -.020 BETA ( 1 ) = -3.866

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 180.000 | 1.3274 | .8508 | .6106 | .5137 | .4421 | .5017 |       | .7759 |        | -.6050 | -.5224 | -.3059 | -.2512 | -.0458 |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |

| PHI     | .000  | .0521  | .0167  | -.0613 | -.1349 | -.1754 | -.1936 |        | .3124 | .2179 |  |  |  |  |  |
|---------|-------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--|--|--|--|--|
| 40.000  | .0002 | .0280  | -.0524 | -.1629 | -.0731 | -.2754 |        |        | .3333 | .1632 |  |  |  |  |  |
| 70.000  | .0334 | -.1474 | .0622  | .2691  | .0422  | .1245  | -.3548 |        |       |       |  |  |  |  |  |
| 90.000  | .0660 | -.0880 | .1624  | .2649  | .0055  | .1286  | -.2359 |        |       |       |  |  |  |  |  |
| 105.000 |       |        | .2627  | .2809  | -.0810 | -.1789 | -.2471 |        |       |       |  |  |  |  |  |
| 110.000 |       |        |        |        |        |        |        | -.4696 |       |       |  |  |  |  |  |
| 120.000 | .0372 | .0252  | .3895  | .2929  | -.1418 | -.1587 | -.1993 | -.3371 |       |       |  |  |  |  |  |
| 135.000 |       |        | .4512  | .4329  | -.1037 | -.0706 | -.1234 |        |       |       |  |  |  |  |  |
| 150.000 | .0773 | .1776  | .4480  | .4112  | -.0103 | -.0066 | -.1075 |        |       |       |  |  |  |  |  |
| 165.000 |       |        | .4236  |        | .2543  | .0611  | -.3836 |        |       |       |  |  |  |  |  |
| 180.000 | .1035 | .2161  | .4076  | .4470  |        |        |        |        |       |       |  |  |  |  |  |

ALPHA ( 2 ) = -.014 BETA ( 2 ) = .187 MACH = 1.0986 Q = 599.48 P = 709.54 RN/L = 3.1886

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |       |       |       |       |       |        |        |        |        |        |        |        |        |
| 20.000  | 1.3307 | .6909 | .2611 | .1748 | .0834 | .0173 |       | .0297  |        | .0076  | -.0345 | -.0913 | -.0868 | -.0998 | -.0287 |
| 40.000  |        |       | .2776 | .1627 | .0428 | .0631 |       | .0202  |        | -.0196 | -.0723 | -.0952 | -.1201 | -.0837 | -.0903 |
| 55.000  |        |       | .4015 | .1930 | .0893 | .0631 |       | -.0013 |        | -.0326 | -.0326 | -.0326 | -.0326 | -.0326 | -.0326 |
| 70.000  |        |       | .4915 | .2761 | .1898 | .1456 |       | .0634  |        | -.0288 | -.0288 | -.0288 | -.0288 | -.0288 | -.0288 |
| 90.000  |        |       | .5392 | .3167 | .2251 | .2082 |       | .1010  |        | -.1297 | -.1297 | -.1297 | -.1297 | -.1297 | -.1297 |
| 120.000 | .7217  |       | .5327 | .3613 | .2440 | .2373 |       | .3193  |        | -.1401 | -.1401 | -.1401 | -.1401 | -.1401 | -.1401 |
| 140.000 |        |       | .6304 | .4558 | .3465 | .3904 |       | .7341  |        | -.2204 | -.2204 | -.2204 | -.2204 | -.2204 | -.2204 |
| 150.000 |        |       | .6349 | .5179 | .4199 | .4773 |       | .4388  |        | -.4826 | -.4826 | -.4826 | -.4826 | -.4826 | -.4826 |
| 151.000 |        |       |       |       |       |       |       | .5021  |        |        |        |        |        |        |        |
| 162.000 |        |       |       |       |       |       |       |        |        |        |        |        |        |        |        |
| 165.000 |        |       |       |       |       |       |       |        |        |        |        |        |        |        |        |
| 169.000 |        |       |       |       |       |       |       |        |        |        |        |        |        |        |        |
| 174.000 |        |       |       |       |       |       |       |        |        |        |        |        |        |        |        |
| 180.000 | 1.3307 | .6460 | .6179 | .5172 | .4473 | .5087 |       | .3255  |        | -.4985 | -.5183 | -.2985 | -.2416 | -.0224 |        |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990  | 1.0180 | 1.0460 |        |        |        |        |        |

| PHI    | .000  | .0423 | .0024 | -.0665 | -.1407 | -.1862 | -.2033 |  | .3816 | .2403 |  |  |  |  |  |
|--------|-------|-------|-------|--------|--------|--------|--------|--|-------|-------|--|--|--|--|--|
| 40.000 | .0897 | .0473 | .0182 | -.0597 | -.1367 | -.0778 | -.2524 |  | .2690 | .1298 |  |  |  |  |  |



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TABULATED PRESSURE DATA - OA148 ( AMES 11-073-1 )

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(XE8830)

AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = -.017 BETA ( 3 ) = 4.244

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 .1235 .3995 .1148 -.1255 -.4273  
180.000 .0903 .4130 .4701

ALPHA ( 3 ) = 3.958 BETA ( 1 ) = -3.869 MACH = 1.1006 Q = 600.44 P = 708.14 RN/L = 3.1894

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .25 .3010 .3780 .4970 .5740

PHI

.000 1.3170 .8207 .3838 .2612 .1707 .0892 .0900 .0430 .0153 -.0326 -.0326 -.0594 -.0452  
20.000 .4265 .2740 .1500 .0892 .1500 .0820 .0820 .0255  
40.000 .5706 .3334 .2181 .1561 .0933 .0933 .0094 -.0175 -.0387 -.0090 -.0715 .0086  
55.000 .6476 .4266 .3264 .2522 .1785 .1785 .0720 .0826 -.1309 -.1429 -.1028  
70.000 .5603 .4422 .3363 .2966 .1983 .1983 .0267 -.3460 -.1853 -.2000 -.1028  
90.000 .8243 .4565 .3408 .3253 .2296 .2296 -.0043 -.3179 -.5411 -.3055 -.1700  
120.000 .6374 .4702 .3617 .4168 .4180 .4180 -.0860  
140.000 .5636 .4355 .3514 .4378 .7865 .7865 -.3356 -.4930 -.2092 -.0794  
150.000 .5636 .4355 .3514 .4378 .7865 .7865 -.3356 -.4930 -.2092 -.0794  
162.000 .5636 .4355 .3514 .4378 .7865 .7865 -.3356 -.4930 -.2092 -.0794  
165.000 .5636 .4355 .3514 .4378 .7865 .7865 -.3356 -.4930 -.2092 -.0794  
169.000 .5636 .4355 .3514 .4378 .7865 .7865 -.3356 -.4930 -.2092 -.0794  
174.000 .5636 .4355 .3514 .4378 .7865 .7865 -.3356 -.4930 -.2092 -.0794  
180.000 .5636 .4355 .3514 .4378 .7865 .7865 -.3356 -.4930 -.2092 -.0794

1.3170 .7143 .4671 .4103 .3412 .4307 .8986 .8162

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .1519 .1722 .1261 .0354 -.0694 -.0947 -.1766  
40.000 .1139 .1408 .1408 .0446 -.0662 -.0091 -.2472  
70.000 -.0522 -.2439 -.3105 .1503 -.0193 -.1503 -.3844  
90.000 -.0261 -.1804 -.0741 .1439 -.0488 -.1705 -.2704  
105.000 .1408 .1557 .1258 -.2376 -.2947  
110.000 .1505 .1505 .1672 .2371 -.2516  
120.000 .2790 .3086 .3087 .3152 .1976 .0168 -.3868  
135.000 .0324 .1066 .3112 .3154 .3106 .3828  
150.000 .0605 .1381  
165.000 .0688  
180.000 .0688.4083 .2676  
.4055 .1825.4670  
-.3653

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TABULATED PRESSURE DATA - 0A148 : AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XERO30)

ALPHA ( 3 ) = 3.959 BETA ( 2 ) = .177 MACH = 1.1005 Q = 600.44 P = 708.14 RN/L = 3.1854

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE: CP

| X/LB    | .0000  | .0080 | .0230 | .0450 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000   | .8249 | .3857 | .2661 | .1720 |       |       | .1005 | .0457  | .0177  | -.0312 | -.0332 | -.0584 | -.0358 |       |
| 20.000  |        |       | .4038 | .2642 | .1367 | .0739 |       | .0948 | .0335  |        |        |        |        |        |       |
| 40.000  |        |       | .5001 | .2910 | .1828 | .1294 |       | .1023 | .0243  | -.0174 | -.0556 | -.0271 | -.0765 | .0148  |       |
| 55.000  |        |       | .5431 | .3343 | .2385 | .1939 |       | .1306 | .0276  |        |        |        |        |        |       |
| 70.000  |        |       | .5497 | .3357 | .2369 | .2240 |       | .1393 | .0207  | -.3826 | -.2121 | -.2059 | -.1057 |        |       |
| 90.000  |        | .6893 | .5615 | .3508 | .2435 | .2513 |       | .1621 | -.0639 | -.4111 | -.2679 | -.2512 | -.0903 |        |       |
| 120.000 |        |       | .5620 | .3962 | .2934 | .3686 |       | .3449 | -.1155 | -.3849 | -.6019 | -.2170 | -.0831 |        |       |
| 140.000 |        |       |       |       |       |       |       |       | -.2154 |        |        |        |        |        |       |
| 150.000 |        |       | .5304 | .4249 | .3272 | .4194 |       | .7074 | -.5018 | -.6796 | -.4635 | -.1991 | -.0502 |        |       |
| 151.000 |        |       |       |       |       |       |       | .4234 |        |        |        |        |        |        |       |
| 162.000 |        |       |       |       |       |       |       | .4780 |        |        |        |        |        |        |       |
| 165.000 |        |       |       |       |       |       |       |       | -.5530 | -.5761 | -.3524 | -.2265 | -.0337 |        |       |
| 169.000 |        |       |       |       |       |       |       | .7869 |        |        |        |        |        |        |       |
| 174.000 |        |       |       |       |       |       |       |       | -.6744 | -.6700 | -.3303 | -.2418 | -.0389 |        |       |
| 180.000 | 1.3240 | .7093 | .5036 | .4858 | .3442 | .4408 | .8764 |       |        |        |        |        |        |        |       |

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |       |        |        |        |        |        |        |
| 40.000  | .1537  | .1657  | .1179  | .0351 | -.0792 | -.1175 | -.1547 |        | .4262  | .2811  |
| 70.000  | .1391  |        | .1410  | .0433 | -.0616 | -.0252 | -.2288 |        | .3568  | .1701  |
| 90.000  | -.0718 | -.2489 | -.2147 | .1459 | -.0464 | -.1698 | -.3969 |        |        |        |
| 90.000  | -.0304 | -.1740 | .0296  | .1178 | -.1142 | -.1917 | -.2714 |        |        |        |
| 105.000 |        |        | .1775  | .0551 | -.1773 | -.2592 | -.3069 |        |        |        |
| 110.000 |        |        |        |       |        |        |        | -.5073 |        |        |
| 120.000 | .0006  | -.0424 | .2359  | .1065 | -.1982 | -.2785 | -.3226 | -.3958 |        |        |
| 135.000 |        |        | .2806  | .3782 | -.1271 | -.1986 | -.2487 |        |        |        |
| 150.000 | .0574  | .0614  | .3021  | .4741 | -.0578 | -.1498 | -.2262 |        |        |        |
| 155.000 | .0609  |        | .3185  |       | .1396  | -.0831 | -.4093 |        |        |        |
| 180.000 | .0701  | .0724  | .3335  | .5052 |        |        |        |        |        |        |

ALPHA ( 3 ) = 3.950 BETA ( 3 ) = .4234 MACH = 1.1005 Q = 600.44 P = 708.14 RN/L = 3.1854

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE: CP

| X/LB    | .0000 | .0080 | .0230 | .0450 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | .8095 | .3783 | .2654 | .1622 |       |       | .0949 | .0439  | .0101  | -.0312 | -.0291 | -.0597 | -.0497 |       |
| 20.000  |       |       | .3698 | .2412 | .1229 | .0506 |       | .0860 | .0236  |        |        |        |        |        |       |
| 40.000  |       |       | .4172 | .2428 | .1453 | .1033 |       | .0996 | .0177  | -.0274 | -.0762 | -.0616 | -.0936 | -.0040 |       |
| 55.000  |       |       | .4335 | .2412 | .1599 | .1355 |       | .0900 | -.0092 |        |        |        |        |        |       |
| 70.000  |       |       | .4379 | .2353 | .1465 | .1640 |       | .0959 | -.0307 | -.4274 | -.2845 | -.2548 | -.0835 |        |       |
| 90.000  |       | .5377 | .4542 | .2494 | .1495 | .1861 |       | .1062 | -.1442 | -.4692 | -.3351 | -.2553 | -.0670 |        |       |
| 120.000 |       |       | .4771 | .3154 | .2122 | .3087 |       | .2359 | -.2207 | -.4656 | -.6478 | -.1919 | -.0435 |        |       |

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TABULATED PRESSURE DATA - 0A14B ( AMES 11-073-1 )

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$$\text{ALPHA} (3) = 3.960 \quad \text{BETA} (3) = 4.234$$

AMES 11-07310A148) -140A/B/C/R ORB FUSELAGE

(02883X)

SECTION (1) ORBITER FUSELAGE

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1860 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 140.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 150.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 151.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 162.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 165.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 169.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 174.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 180.000 | 1.3082 | .6832 | .4969 | .4049 | .3368 | .4319 | .8356 | .7460 |        | -.5614 | -.6530 | -.3537 | -.2487 | -.0464 |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |

ALPHA ( 4 ) = 8.035    BETA ( 1 ) = -3.862    MACH = 1.0985    Q = 599.52    P = 709.77    RN/L = 3.1893

SECTION 1: ORBITER FUSELAGE

[illegible]

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## TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

(XEB030)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 8.035 BETA ( 1 ) = -3.862

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | 0.000  | 0.080  | 0.230  | 0.460  | 0.700  | 1.120  | 1.590  | 1.860  | 1.770  | 2.040  | 2.510  | 3.010  | 3.780  | 4.970  | 5.740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 180.000 | 1.2878 | .5686  | .3602  | .3144  | .2362  | .3677  |        | .6957  |        | -.7042 | -.6415 | -.3955 | -.2118 | -.0585 |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| .000    | .2438  | .2572  | .2019  | .0983  | .0331  | -.0284 | -.1373 |        | .4939  | .3099  |        |        |        |        |       |
| 40.000  | .2403  |        | .2240  | .1157  | .1183  | .0180  | -.2085 |        | .4453  | .1954  |        |        |        |        |       |
| 70.000  | -.0992 | -.3269 |        | -.0013 | -.0784 | -.1749 | -.3967 |        |        |        |        |        |        |        |       |
| 90.000  | -.0686 | -.2539 | -.2858 | .0077  | -.1303 | -.2130 | -.2801 |        |        |        |        |        |        |        |       |
| 105.000 |        | .0143  | .0729  | .0729  | -.1948 | -.2914 | -.3261 |        |        |        |        |        |        |        |       |
| 110.000 |        |        |        |        |        |        |        | -.4913 |        |        |        |        |        |        |       |
| 120.000 | -.1618 | -.1841 | .1643  | .1145  | -.2280 | -.2651 | -.3075 | -.3861 |        |        |        |        |        |        |       |
| 135.000 |        |        | .1571  | .3434  | -.1874 | -.2146 | -.2502 |        |        |        |        |        |        |        |       |
| 150.000 | -.0032 | -.0559 | .1693  | .4052  | -.0879 | -.1502 | -.2430 |        |        |        |        |        |        |        |       |
| 165.000 | .0616  | .2148  |        |        | .1478  | -.0516 | -.4111 |        |        |        |        |        |        |        |       |
| 180.000 | .0664  | .0047  | .2692  | .4982  |        |        |        |        |        |        |        |        |        |        |       |

RN/L = 3.1693

P = 709.77

Q = 599.52

0

.181 MACH = 1.0985

ALPHA ( 4 ) = 8.041 BETA ( 2 ) =

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | 0.000  | 0.080 | 0.230 | 0.460 | 0.700 | 1.120  | 1.580  | 1.660 | 1.770  | 2.040  | 2.510  | 3.010  | 3.780  | 4.970  | 5.740  |
|---------|--------|-------|-------|-------|-------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |       |       |       |        |        |       |        |        |        |        |        |        |        |
| .000    | 1.2691 | .9488 | .5149 | .3708 | .2652 | .1654  |        | .1474 |        | .1220  | .0734  | .0382  | .0408  | .0155  | .0238  |
| 20.000  |        |       | .5324 | .3669 | .2414 | .2100  |        | .1446 |        | .1114  |        | .0521  | .0309  | -.0085 | .0338  |
| 40.000  |        |       | .5848 | .3848 | .2756 | .2003  |        | .1675 |        | .1256  |        | .0703  | -.2030 | -.2182 |        |
| 55.000  |        |       | .5728 | .3469 | .2692 | .2315  |        | .1512 |        | .1031  |        | -.3221 | -.2443 | -.2658 | -.1827 |
| 70.000  |        |       | .5397 | .3400 | .2305 | .2470  |        | .1592 |        | .0703  |        | -.0048 | -.5747 | -.5632 | -.1524 |
| 90.000  | .6349  |       | .5400 | .3263 | .2363 | .3337  |        | .1849 |        | -.0084 |        | -.3977 | -.5357 | -.2122 | -.0710 |
| 120.000 |        |       | .4776 | .3202 | .2201 |        |        | .3557 |        | -.2025 |        | -.5035 | -.7364 | -.2039 | -.0451 |
| 140.000 |        |       | .4156 | .3214 | .2258 | .3599  |        | .6907 | .4133  | -.2025 |        | -.6027 | -.6303 | -.4041 | -.2032 |
| 150.000 |        |       |       |       |       |        |        |       | .4492  | -.6027 | -.6303 | -.4041 | -.2039 | -.0451 |        |
| 162.000 |        |       |       |       |       |        |        |       |        |        |        |        |        |        |        |
| 165.000 |        |       |       |       |       |        |        |       |        |        |        |        |        |        |        |
| 169.000 |        |       |       |       |       |        |        |       |        |        |        |        |        |        |        |
| 174.000 |        |       |       |       |       |        |        |       |        |        |        |        |        |        |        |
| 180.000 | 1.2691 | .5570 | .3778 | .3131 | .2480 | .3762  | .8251  | .7457 |        | -.7390 | -.7142 | -.3800 | -.2032 | -.0413 |        |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |        |        |        |        |        |
| PHI     |        |       |       |       |       |        |        |       |        |        |        |        |        |        |        |
| .000    | .2450  | .2547 | .2080 | .1020 | .0171 | -.0269 | -.1102 |       | .5030  | .3122  |        |        |        |        |        |
| 40.000  | .2552  |       | .2264 | .1208 | .1046 | .0161  | -.1912 |       | .4178  | .1863  |        |        |        |        |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

(XEBB3U)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 8.041 BETA ( 2 ) = .181

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

70.000 -.1124 -.3415 -.3951 .0412 -.0999 -.2125 -.4151  
 90.000 -.0713 -.2285 -.1929 .0166 -.1787 -.2392 -.2891  
 105.000 .0143 .0597 -.2589 -.3137 -.3607  
 110.000  
 120.000 -.0389 -.1140 .1287 .1020 -.2728 -.3368 -.3747  
 135.000 .1782 .3500 -.1792 -.2623 -.3167  
 150.000 .0456 -.0408 .2339 .5396 -.1154 -.2201 -.2827  
 165.000 .0696 .2860 .0814 -.1595 -.4317  
 180.000 .0752 .0040 .3085 .5465

-.5286  
 -.4507

ALPHA ( 4 ) = 8.040 BETA ( 3 ) = 4.238 MACH = 1.0985 Q = 599.52 P = 709.77 RN/L = 3.1893

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

20.000 1.2741 .9357 .5057 .3667 .2540 .1479  
 40.000 .4909 .3336 .2152 .1445 .1340  
 60.000 .4925 .3200 .2168 .1624 .0769  
 80.000 .4565 .2639 .1758 .1399 .0432  
 100.000 .4294 .2364 .1393 .1661 .0165  
 120.000 .4223 .2368 .1398 .1934 .0775  
 140.000 .4060 .2578 .1610 .2990 .1336  
 160.000 .3775 .2910 .1916 .3362 .2843  
 180.000 .3256 .3793 .6170

1.2741 .5333 .3782 .3122 .2293 .3682 .7944  
 .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

24.38 .2438 .2600 .2012 .0952 -.0091 -.0577 -.1117  
 40.000 .2565 .2144 .1133 .0304 .0053 -.1758  
 60.000 -.0871 -.3211 -.3320 .0208 -.1614 -.2700 -.4303  
 80.000 -.0301 -.2003 -.1299 -.0220 -.2263 -.2866 -.3316  
 100.000 .0244 .0086 -.2877 -.3982 -.4136  
 120.000  
 140.000 .0482 -.0804 .1069 -.0349 -.3422 -.3923 -.5081  
 160.000 .2332 .2377 -.2531 -.3506 -.3702  
 180.000 .0378 -.0016 .2914 .4255 -.1943 -.3198 -.3752

.5005 .3156  
 .3800 .1671

-.5331  
 -.4625

DATE 10 FEB 76 TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

(XEB830)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 8.040 BETA ( 3 ) = 4.238

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI  
165.000 .0947 .2767  
180.000 .0630 .2576 .4858 .0147 -.2520 -.4616

ALPHA ( 5 ) = 11.975 BETA ( 1 ) = -3.843 MACH = 1.0970 Q = 599.10 P = 711.19 RN/L = 3.1692

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1590 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI  
.000 1.2312 1.0561 .5366 .4684 .3554 .2539 .2042  
20.000 .6802 .4931 .3547 .2539 .2151  
40.000 .7471 .5322 .4102 .3189 .2530  
55.000 .7019 .4945 .3782 .2871 .2224  
70.000 .6307 .4352 .3116 .2885 .2261  
90.000 .5657 .3907 .2814 .2838 .2482  
120.000 .4408 .2826 .1847 .2974 .3970  
140.000 .3113 .2151 .1265 .3087 .7487  
150.000 .151.000 .4698  
162.000 .4780  
155.000 .7551  
169.000 .8050  
174.000 .6593  
180.000 .9990 1.0180

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180

PHI  
.000 .3277 .3303 .2733 .1786 .1274 .0116 -.0918  
40.000 .3560 .3051 .3051 .2063 .1760 .0598 -.1693  
70.000 -.1350 -.3861 -.4622 -.1913 -.1653 -.1774 -.3693  
90.000 -.0711 -.2940 -.3872 -.0605 -.1774 -.2698  
105.000 .105.000 .0450 .3291 .2680 .3304  
110.000 .0613 .0971 .2786 .3521 .3033  
120.000 .0698 .2567 .2432 .2749 .2632  
135.000 .0665 .4439 .1541 .2481 .3392  
150.000 -.0593 -.1689 .1621 .0851 .1142  
165.000 .0392 .0403 .5134  
180.000 .0800

DATE 10 FEB 76

## TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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ALPHA ( 5 ) = 11.985 BETA ( 2 ) = .181 MACH = 1.0970 Q = 599.10 P = 711.19 RVL = 3.1892  
(XE8830)

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|
| PHI     | 1.2358 | 1.0602 | .6425 | .4748 | .3578 |       |       | .2153 |       | .1927  | .1408 | .1177 | .1199 | .1013 | .1920 |
| 20.000  |        |        | .6512 | .4730 | .3429 | .2484 |       | .2105 |       | .1790  |       |       |       |       |       |
| 40.000  |        |        | .6576 | .4638 | .3509 | .2617 |       | .2400 |       | .1736  |       |       |       |       |       |
| 55.000  |        |        | .5804 | .3778 | .2708 | .1990 |       | .1495 |       | .1243  |       | .0801 | .0973 | .0754 | .2095 |
| 70.000  |        |        | .5115 | .3220 | .2088 | .2148 |       | .1667 |       | .1077  |       |       |       |       |       |
| 90.000  | .5667  |        | .4679 | .2937 | .1895 | .2249 |       | .1945 |       | .0416  |       |       |       |       |       |
| 120.000 |        |        | .3816 | .2395 | .1334 | .2911 |       | .3576 |       | -.0646 |       |       |       |       |       |
| 140.000 |        |        |       |       |       |       |       |       |       | -.1897 |       |       |       |       |       |
| 150.000 |        |        | .2995 | .2277 | .1145 | .3137 |       | .6745 |       | -.4788 |       |       |       |       |       |
| 162.000 |        |        |       |       |       |       |       |       |       |        |       |       |       |       |       |
| 165.000 |        |        |       |       |       |       |       |       |       |        |       |       |       |       |       |
| 169.000 |        |        |       |       |       |       |       |       |       |        |       |       |       |       |       |
| 174.000 |        |        |       |       |       |       |       |       |       |        |       |       |       |       |       |
| 180.000 |        |        |       |       |       |       |       |       |       |        |       |       |       |       |       |

.4047

.4267

.6427

.7633

.7322

.4113

.1755

-.0389

1.0460

.9990

1.0180

.9600

.9600

.9600

.9600

.9600

.9600

.9600

.9600

.9600

.9600

.9600

.9600

.9600

.9600

.9600

.9600

.9600

.9600

.9600

.9600

.9600

ALPHA ( 5 ) = 11.977 BETA ( 3 ) = .4250 MACH = 1.0970 Q = 599.10 P = 711.19 RVL = 3.1892

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0090  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|
| PHI     | 1.2225 | 1.0443 | .6291 | .4651 | .3416 |       |       | .2056 |       | .1805  | .1371 | .1156 | .1166 | .0944 | .1964 |
| 20.000  |        |        | .6003 | .4282 | .3029 | .2116 |       | .1849 |       | .1465  |       |       |       |       |       |
| 40.000  |        |        | .5523 | .3843 | .2753 | .1854 |       | .1693 |       | .1153  |       | .0516 | .0524 | .0380 | .1743 |
| 55.000  |        |        | .4503 | .2654 | .1592 | .0974 |       | .0778 |       | .0794  |       |       |       |       |       |
| 70.000  |        |        | .3908 | .2220 | .1156 | .1481 |       | .1103 |       | .0671  |       |       |       |       |       |
| 90.000  | .4172  |        | .3705 | .2007 | .0901 | .1853 |       | .1445 |       | -.0150 |       |       |       |       |       |
| 120.000 |        |        | .3223 | .1828 | .0625 | .2705 |       | .2997 |       | -.1464 |       |       |       |       |       |



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(XE8831) ( 05 AUG 75 )

## REFERENCE DATA

|         |           |        |        |           |     |       |
|---------|-----------|--------|--------|-----------|-----|-------|
| SREF =  | 2690.0000 | SO.FT. | XMRP = | 1076.6800 | IN. | XO    |
| LREF =  | 474.8300  | IN.    | YMRP = | .0000     | IN. | YO    |
| BREF =  | 936.0680  | IN.    | ZMRP = | 375.0000  | IN. | ZO    |
| SCALE = |           |        |        |           |     |       |
|         |           |        |        |           |     | .0300 |

## PARAMETRIC DATA

|          |         |          |        |
|----------|---------|----------|--------|
| RUDDER = | -10.000 | SPDRK =  | 35.000 |
| BOFLAP = | 16.300  | L-ELVN = | 10.000 |
| R-ELVN = | .000    | MACH =   | .900   |

|               |        |              |        |      |          |   |          |   |          |      |          |
|---------------|--------|--------------|--------|------|----------|---|----------|---|----------|------|----------|
| ALPHA ( 1 ) = | -3.977 | BETA ( 1 ) = | -3.852 | MACH | = .89977 | Q | = 600.28 | P | = 1059.2 | RN/L | = 3.5777 |
|---------------|--------|--------------|--------|------|----------|---|----------|---|----------|------|----------|

## SECTION ( ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB | .0000 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 2    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 3    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 4    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 5    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 6    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 7    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 8    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 9    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 10   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 11   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 12   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 13   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 14   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 15   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 16   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 17   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 18   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 19   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 20   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 21   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 22   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 23   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 24   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 25   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 26   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 27   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 28   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 29   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 30   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 31   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 32   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 33   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 34   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 35   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 36   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 37   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 38   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 39   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 41   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 42   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 43   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 44   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 45   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 46   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 47   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

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|         |         |        |        |        |        |        |        |        |        |        |        |        |
|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1.1910  | .3539   | -.0756 | -.1119 | -.1773 | -.2512 | -.2222 | -.2134 | -.1808 | -.0746 | -.0331 | .0022  | -.0169 |
| .000    | -       | -      | -.1356 | -.2306 | -.2462 | -.2660 | -.2415 | -      | -      | -      | -      | -      |
| 20.000  | -.0534  | -.1480 | -.1132 | -.2122 | -.2462 | -.3567 | -.4218 | -.3735 | -.1279 | -.0869 | -.0419 | -.0464 |
| 40.000  | .3338   | .0830  | .0830  | -.0006 | -.0980 | -.1974 | -.2845 | -      | -      | -      | -      | -      |
| 55.000  | .4534   | .2239  | .2239  | .1279  | .0622  | -.0957 | -.2330 | -.7176 | -.0178 | .0557  | .1034  | -      |
| 70.000  | .5452   | .3101  | .3101  | .2072  | .1125  | -.0688 | -.3050 | -.6581 | -.0489 | .0421  | .0897  | -      |
| 90.000  | .6347   | .4506  | .4506  | .3315  | .3230  | .1859  | -.2325 | -.5817 | -.1145 | .0256  | .0632  | -      |
| 110.000 | .6373   | .4972  | .4972  | .3970  | .4162  | .6578  | -.1612 | -      | -      | -      | -      | -      |
| 130.000 | .5100   | .5100  | .5100  | -      | -      | -      | -.2745 | -.8609 | -.0763 | .0204  | .0425  | -      |
| 162.000 | .62.000 | -      | -      | -      | -      | .3265  | -      | -      | -      | -      | -      | -      |
| 65.000  | .69.000 | -      | -      | -      | -      | .3872  | -      | -      | -      | -      | -      | -      |
| 69.000  | -       | -      | -      | -      | -      | -      | -.8373 | -.7766 | -.0249 | .0119  | .0364  | -      |

**XIX**

III

|        |         |         |        |        |        |        |        |
|--------|---------|---------|--------|--------|--------|--------|--------|
| 0.000  | -.1285  | -.1820  | -.2297 | -.3147 | -.2371 | -.1780 | .0006  |
| 40.000 | -.2348  | -.2188  | -.2950 | -.2950 | -.1519 | -.2072 | -.0769 |
| 70.000 | .0230   | -.0535  | .1466  | .1466  | -.1688 | -.3767 | -.2248 |
| 90.000 | .0484   | -.0006  | .1141  | .1872  | -.2185 | -.3162 | -.3944 |
| 05.000 | .05.000 | .05.000 | .1783  | .2349  | -.3227 | -.3319 | -.4912 |
| 10.000 |         |         |        |        |        |        |        |
| 20.000 | .0594   | .0825   | .2807  | .3494  | -.3757 | -.3345 | -.3301 |
| 35.000 |         |         | .3487  | .4431  | -.2435 | -.1901 | -.2707 |
| 50.000 | .0657   | .1289   | .3511  | .4426  | -.1432 | -.1454 | -.2569 |
| 65.000 | .0635   |         | .3322  |        | .0729  | -.0948 | -.2534 |
| 80.000 | .0443   | .1293   | .3123  | .4945  |        |        |        |

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB831)

ALPHA ( 1 ) = -3.975 BETA ( 2 ) = .187 MACH = .89977 Q = 600.28 P = 1059.2 RN/L = 3.5777

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |        |        |        |        |       |        |        |        |        |        |        |        |       |
| .000    | 1.1950 | .3591  | -.0691 | -.0960 | -.1721 | -.2239 |       | -.2126 | -.2165 | -.1909 | -.0629 | -.0296 | .0142  | -.0104 |       |
| 20.000  |        | -.0538 | -.1256 | -.2142 | -.2107 |        |       | -.2392 | -.2363 | -.3408 | -.0738 | -.0423 | -.0058 | -.0144 |       |
| 40.000  |        | .1033  | -.1155 | -.1999 | -.2107 |        |       | -.3007 | -.3561 |        |        |        |        |        |       |
| 55.000  |        | .2459  | .0214  | -.0622 | -.1325 |        |       | -.2343 | -.3389 |        |        |        |        |        |       |
| 70.000  |        | .3459  | .1086  | -.0278 | -.0198 |        |       | -.1747 | -.3229 | -.7610 | -.0420 | .0445  | .0892  |        |       |
| 90.000  | .5815  | .4287  | .1855  | .1044  | .0144  |        |       | -.1685 | -.4562 | -.7241 | -.0964 | .0323  | .0745  |        |       |
| 120.000 |        | .5346  | .3476  | .2222  | .2314  |        |       | .0603  | -.4310 | -.6695 | -.1839 | .0104  | .0485  |        |       |
| 140.000 |        |        |        |        |        |        |       |        | -.4545 |        |        |        |        |        |       |
| 150.000 |        | .5980  | .4596  | .3577  | .3719  |        |       | .5791  | -.7947 | -.8298 | -.0463 | .0201  | .0456  |        |       |
| 162.000 |        |        |        |        |        |        |       |        | .2295  |        |        |        |        |        |       |
| 165.000 |        |        |        |        |        |        |       |        | .3120  |        |        |        |        |        |       |
| 169.000 |        |        |        |        |        |        |       |        |        | -.6422 | -.7332 | -.0298 | .0215  | .0471  |       |
| 174.000 |        |        |        |        |        |        |       |        |        |        |        |        |        |        |       |
| 180.000 | 1.1950 | .8302  | .5936  | .4725  | .3971  | .4192  | .8138 | .6764  | -.9477 | -.7241 | -.0282 | .0220  | .0459  |        |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600 | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |

## PHI

|         |        |        |        |        |        |        |        |        |       |       |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--|--|--|--|--|
| .000    | -.1264 | -.1941 | -.2236 | -.3267 | -.2167 | -.1768 | -.0011 |        | .3340 | .1213 |  |  |  |  |  |
| 40.000  | -.1923 | -.2163 | -.2163 | -.3238 | -.1608 | -.2019 | -.0558 |        | .1962 | .0325 |  |  |  |  |  |
| 70.000  | .0113  | -.0553 | .0268  | .0967  | -.2346 | -.1321 | -.2496 |        |       |       |  |  |  |  |  |
| 90.000  | .0383  | .0005  | .0869  | .1237  | -.3083 | -.3945 | -.3636 |        |       |       |  |  |  |  |  |
| 105.000 |        |        | .1532  | .1355  | -.4285 | -.4274 | -.4732 |        |       |       |  |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        | -.3313 |       |       |  |  |  |  |  |
| 120.000 | .0575  | .0730  | .2185  | .2322  | -.5144 | -.4436 | -.4414 | -.3154 |       |       |  |  |  |  |  |
| 135.000 |        |        | .3066  | .4559  | -.3603 | -.2841 | -.3986 |        |       |       |  |  |  |  |  |
| 150.000 | .0736  | .1320  | .3281  | .5189  | -.2423 | -.2466 | -.3425 |        |       |       |  |  |  |  |  |
| 165.000 | .0732  |        | .3316  |        | -.0392 | -.2123 | -.3095 |        |       |       |  |  |  |  |  |
| 180.000 | .0723  | .1425  | .3334  | .5389  |        |        |        |        |       |       |  |  |  |  |  |

ALPHA ( 1 ) = -3.986 BETA ( 3 ) = .4269 MACH = .89977 Q = 600.28 P = 1059.2 RN/L = 3.5777

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |        |        |        |        |       |        |        |        |        |        |        |        |       |
| .000    | 1.1834 | .3410 | -.0839 | -.1048 | -.1832 | -.2181 |       | -.2101 | -.2339 | -.1781 | -.0739 | -.0287 | .0043  | -.0194 |       |
| 20.000  |        |       | -.0806 | -.1306 | -.2193 | -.2181 |       | -.2266 | -.2395 |        |        |        |        |        |       |
| 40.000  |        |       | .0367  | -.1365 | -.2061 | -.1987 |       | -.2716 | -.3202 | -.3015 | -.0504 | -.0127 | -.0016 | .0058  |       |
| 55.000  |        |       | .1483  | -.0548 | -.1269 | -.1646 |       | -.2664 | -.3835 |        |        |        |        |        |       |
| 70.000  |        |       | .2278  | .0032  | -.0680 | -.0882 |       | -.2576 | -.3969 | -.8325 | -.0807 | .0435  | .0747  |        |       |
| 90.000  | .4233  |       | .3023  | .0507  | .0011  | -.0800 |       | -.2560 | -.5888 | -.7573 | -.2070 | .0376  | .0614  |        |       |
| 120.000 |        |       | .4189  | .2322  | .1052  | .1210  |       | -.0637 | -.5933 | -.8155 | -.2422 | -.0176 | .0242  |        |       |



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB831)

ALPHA ( 2 ) = -.002 BETA ( 1 ) = -3.870

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | 0.000  | 0.180  | 0.230  | 0.460  | 0.700  | 1.120  | 1.580  | 1.660  | 1.770   | 2.040  | 2.510  | 3.010 | 3.780 | 4.970 | 5.740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|-------|-------|-------|-------|
| PHI     |        |        |        |        |        |        |        |        |         |        |        |       |       |       |       |
| 180.000 | 1.2037 | .7105  | .4592  | .3549  | .2931  | .3388  |        | .5866  | -1.0489 | -.8530 | -.0549 | .0054 | .0030 |       |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180  | 1.0460 |        |       |       |       |       |
| PHI     |        |        |        |        |        |        |        |        |         |        |        |       |       |       |       |
| .000    | -.0279 | -.0698 | -.1355 | -.2460 | -.2113 | -.1937 | .0051  |        | .3119   | .1139  |        |       |       |       |       |
| 40.000  | -.0830 | -.1233 | -.2284 | -.1225 | -.1951 | -.1018 |        | .2855  | .0720   |        |        |       |       |       |       |
| 70.000  | -.1113 | -.2417 | -.0234 | .1300  | -.1771 | -.3696 | -.1873 |        |         |        |        |       |       |       |       |
| 90.000  | -.0670 | -.1509 | .0573  | .1616  | -.2354 | -.3132 | -.2742 |        |         |        |        |       |       |       |       |
| 105.000 |        | .1272  | .2107  | .3504  | -.3134 | -.4729 |        |        |         |        |        |       |       |       |       |
| 110.000 |        |        |        |        |        |        | -.3520 |        |         |        |        |       |       |       |       |
| 120.000 | -.0527 | -.0293 | .2405  | .2836  | -.4359 | -.3050 | -.3703 | -.2704 |         |        |        |       |       |       |       |
| 135.000 |        | .3086  | .3086  | .3574  | -.3391 | -.2217 | -.2855 |        |         |        |        |       |       |       |       |
| 150.000 | -.0121 | .0607  | .3044  | .2993  | -.2382 | -.1812 | -.2695 |        |         |        |        |       |       |       |       |
| 165.000 | -.0062 | .2819  |        |        | .0212  | -.1479 | -.2775 |        |         |        |        |       |       |       |       |
| 180.000 | -.0019 | .0750  | .2673  | .4039  |        |        |        |        |         |        |        |       |       |       |       |

ALPHA ( 2 ) = .000 BETA ( 2 ) = .184 MACH = .89780 Q = 598.63 P = 1060.9 RN/L = 3.5706

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | 0.000  | 0.080  | 0.230  | 0.460  | 0.700  | 1.120  | 1.580  | 1.660  | 1.770  | 2.040  | 2.510  | 3.010  | 3.780 | 4.970 | 5.740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |       |       |       |
| .000    | 1.2110 | .5204  | .0756  | .0048  | -.0839 | -.1451 |        | -.1559 | -.1575 | -.1809 | -.0630 | -.0158 | .0267 | .0316 |       |
| 20.000  |        |        | .0987  | -.0082 | -.1149 | -.1098 |        | -.1713 | -.1767 | -.2144 | -.0483 | -.0080 | .0123 | .0439 |       |
| 40.000  |        |        | .2303  | .0126  | -.0782 | -.1098 |        | -.1913 | -.2144 | -.2364 |        |        |       |       |       |
| 55.000  |        |        | .3288  | .1151  | .0307  | -.0286 |        | -.1437 | -.2364 | -.2621 | -.7312 | -.0768 | .0090 | .0399 |       |
| 70.000  |        |        | .3833  | .1528  | .0659  | .0267  |        | -.1163 | -.2621 | -.3779 | -.7140 | -.1122 | .0111 | .0432 |       |
| 90.000  | .5687  |        | .4279  | .1986  | .0868  | .0557  |        | -.1069 | -.3779 | -.4089 | -.6883 | -.1975 | .0118 | .0242 |       |
| 120.000 |        |        | .4851  | .3053  | .1941  | .2158  |        | .0941  | -.4089 | -.4955 |        |        |       |       |       |
| 140.000 |        |        |        |        |        |        |        | .5485  | -.4955 | -.8308 | -.9500 | -.1659 | .0231 | .0227 |       |
| 150.000 |        |        | .4925  | .3659  | .2695  | .3086  |        |        | .2070  |        |        |        |       |       |       |
| 162.000 |        |        |        |        |        |        |        |        | .2740  |        |        |        |       |       |       |
| 165.000 |        |        |        |        |        |        |        |        |        | -.9167 | -.8589 | -.0667 | .0198 | .0241 |       |
| 169.000 |        |        |        |        |        |        |        |        |        |        |        |        |       |       |       |
| 174.000 |        |        |        |        |        |        |        |        |        |        |        |        |       |       |       |
| 180.000 | 1.2110 | .7038  | .4786  | .3720  | .4030  | .3459  | .7696  | .6469  | -.9367 | -.8586 | -.0478 | .0205  | .0189 |       |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |       |       |       |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |       |       |       |
| .000    | -.0269 | -.0748 | -.1495 | -.2591 | -.2114 | -.1823 | -.0052 |        | .3279  | .1110  |        |        |       |       |       |
| 40.000  | -.0623 |        | -.1375 | -.2379 | -.1410 | -.1962 | -.0874 |        | .2287  | .0256  |        |        |       |       |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB831)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = .000 BETA ( 2 ) = .184

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |       |        |        |        |        |        |        |
| 70.000  | -.1193 | -.2131 | -.0481 | .0765 | -.2526 | -.4424 | -.2095 |        |        |        |
| 90.000  | -.0722 | -.1401 | .0310  | .0921 | -.3239 | -.4229 | -.2939 |        |        |        |
| 105.000 |        |        | .0997  | .1269 | -.4388 | -.4757 | -.3852 |        |        |        |
| 110.000 |        |        |        |       |        |        |        | -.3533 |        |        |
| 120.000 | -.0229 | -.0126 | .1743  | .2377 | -.5049 | -.4819 | -.3834 | -.2950 |        |        |
| 135.000 |        |        | .2449  | .3995 | -.3967 | -.3467 | -.3089 |        |        |        |
| 150.000 | .0085  | .0592  | .2690  | .4508 | -.3067 | -.2961 | -.3269 |        |        |        |
| 165.000 | .0109  |        | .2708  |       | -.1021 | -.2707 | -.2817 |        |        |        |
| 180.000 | .0111  | .0800  | .2789  | .4784 |        |        |        |        |        |        |

ALPHA ( 2 ) = -.010 BETA ( 3 ) = .4247 MACH = .89780 Q = 598.63 P = 1060.9 RV/L = 3.5706

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460  | .0700  | .1120  | .1580 | .1660  | .1770  | .2040   | .2510  | .3010  | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|--------|--------|--------|-------|--------|--------|---------|--------|--------|-------|-------|-------|
| PHI     |        |       |       |        |        |        |       |        |        |         |        |        |       |       |       |
| 70.000  | 1.1939 | .4937 | .0587 | -.0064 | -.0966 | -.1470 |       | -.1563 | -.1759 | -.1766  | -.0746 | -.0198 | .0274 | .0248 |       |
| 20.000  |        |       | .0646 | -.0264 | -.1221 | -.1152 |       | -.1633 |        | -.1855  |        |        |       |       |       |
| 40.000  |        |       | .1537 | -.0180 | -.1023 | -.0413 |       | -.1759 |        | -.2084  | -.2649 | -.0538 | .0016 | .0250 | .0559 |
| 55.000  |        |       | .2204 | .0282  | -.0413 | -.0750 |       | -.1804 |        | -.2732  |        |        |       |       |       |
| 70.000  |        |       | .2638 | .0466  | -.0248 | -.0385 |       | -.1768 |        | -.3287  | -.7789 | -.0913 | .0104 | .0387 |       |
| 90.000  |        | .4105 | .3122 | .0843  | -.0144 | -.0270 |       | -.1856 |        | -.4930  | -.7836 | -.1331 | .0193 | .0381 |       |
| 120.000 |        |       | .3817 | .2025  | .0866  | .1262  |       | -.0211 |        | -.5617  | -.7850 | -.2133 | .0099 | .0186 |       |
| 140.000 |        |       | .4303 | .3231  | .2223  | .2552  |       | .4535  |        | -.9177  | -.9600 | -.1192 | .0137 | .0066 |       |
| 150.000 |        |       |       |        |        |        |       |        | .0965  |         |        |        |       |       |       |
| 151.000 |        |       |       |        |        |        |       |        | .1835  |         |        |        |       |       |       |
| 162.000 |        |       |       |        |        |        |       |        |        | -.8776  | -.8570 | -.0484 | .0122 | .0061 |       |
| 165.000 |        |       |       |        |        |        |       |        |        |         |        |        |       |       |       |
| 169.000 |        |       |       |        |        |        |       |        |        |         |        |        |       |       |       |
| 174.000 |        |       |       |        |        |        |       |        |        |         |        |        |       |       |       |
| 180.000 | 1.1939 | .6829 | .4707 | .3582  | .2875  | .3355  | .7115 | .5829  |        | -.10568 | -.8694 | -.0870 | .0113 | .0071 |       |

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

|         |        |        |        |        |        |        |        |       |       |  |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--|--|--|--|--|--|
| 70.000  | -.0255 | -.0727 | -.1421 | -.2599 | -.2019 | -.1803 | -.0097 |       |       |  |  |  |  |  |  |
| 40.000  | -.0420 |        | -.1232 | -.2430 | -.1419 | -.1993 | -.0982 | .3079 | .1067 |  |  |  |  |  |  |
| 70.000  | -.1154 | -.1827 | -.0616 | .0295  | -.3082 | -.4962 | -.2667 | .2076 | .0114 |  |  |  |  |  |  |
| 90.000  | -.0540 | -.1126 | .0053  | .0345  | -.3924 | -.4888 | -.4151 |       |       |  |  |  |  |  |  |
| 105.000 |        |        | .0680  | .0451  | -.5167 | -.5444 | -.5437 |       |       |  |  |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        |       |       |  |  |  |  |  |  |
| 120.000 | -.0173 | -.0197 | .1222  | .0934  | -.6380 | -.6019 | -.6449 |       |       |  |  |  |  |  |  |
| 135.000 |        |        | .2206  | .3435  | -.5226 | -.5068 | -.5284 |       |       |  |  |  |  |  |  |
| 150.000 | .0082  | .0576  | .2493  | .4320  | -.3987 | -.4720 | -.4496 |       |       |  |  |  |  |  |  |

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## TABULATED PRESSURE DATA - OA148 ( AMES 11-073-1 )

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(XEB831)

ALPHA ( 2 ) = -.010 BETA ( 3 ) = 4.247

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|--------|-------|-------|-------|--------|--------|--------|-------|--------|--------|
| PHI     |        |       |       |       |        |        |        |       |        |        |
| 165.000 | .0092  | .2531 |       |       |        |        |        |       |        |        |
| 180.000 | -.0009 | .0864 | .2828 | .4248 | -.1764 | -.3993 | -.2861 |       |        |        |

ALPHA ( 3 ) = 3.984 BETA ( 1 ) = -3.872 MACH = .89870 Q = 599.00 P = 1059.5 RN/L = 3.5709

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| .000    | 1.1958 | .6647  | .2218  | .1027  | .0156  |        |        | -.0914 | -.1044 | -.1178 | -.1309 | -.0866 | .0027  | .0707  | .0852 |
| 40.000  |        |        | .2621  | .1128  | .0024  | -.0620 |        | -.1025 | -.1178 | -.1290 | -.1722 | -.0396 | .0192  | .0600  | .1053 |
| 50.000  |        |        | .4157  | .1679  | .0697  | -.0006 |        | -.0944 | -.1117 | -.1330 | -.5744 | -.1488 | -.0289 | .0272  |       |
| 60.000  |        |        | .4954  | .2782  | .1784  | .0942  |        | -.0070 | -.1330 | -.2097 | -.6200 | -.2033 | -.0372 | .0189  |       |
| 70.000  |        |        | .5135  | .2947  | .1869  | .1333  |        | -.0002 | -.1330 | -.2624 | -.6160 | -.3254 | -.0879 | -.0616 |       |
| 80.000  | .6831  |        | .5188  | .3119  | .1930  | .1598  |        | .0213  | -.3548 | -.4627 | -.9559 | -.4282 | .0036  | -.0215 |       |
| 120.000 |        |        | .4933  | .3282  | .2192  | .2550  |        | .2046  |        |        |        |        |        |        |       |
| 140.000 |        |        |        | .2902  | .2062  | .2711  |        | .6034  | .2760  |        |        |        |        |        |       |
| 150.000 |        |        | .4157  |        |        |        |        |        | .3032  |        |        |        |        |        |       |
| 162.000 |        |        |        |        |        |        |        |        |        | -.9632 | -.7733 | -.4169 | .0320  | -.0125 |       |
| 165.000 |        |        |        |        |        |        |        | .6337  |        |        |        |        |        |        |       |
| 169.000 |        |        |        |        |        |        |        | .5388  |        |        |        |        |        |        |       |
| 174.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 180.000 | 1.1958 | .5709  | .3409  | .2605  | .1973  | .2631  | .7385  |        |        |        |        |        |        |        |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| .000    | .0595  | .0123  | -.0522 | -.1580 | -.1587 | -.1961 | .0044  |        |        |        |        |        |        |        |       |
| 40.000  |        |        | -.0342 | -.1322 | -.0883 | -.1768 | -.0762 |        |        |        |        |        |        |        |       |
| 70.000  | -.2153 | -.4556 | -.1270 | .0726  | -.1818 | -.3724 | -.1531 |        |        |        |        |        |        |        |       |
| 90.000  | -.1699 | -.3668 | -.0368 | .0916  | -.2484 | -.3156 | -.1989 |        |        |        |        |        |        |        |       |
| 105.000 |        |        | .0635  | .1159  | -.3490 | -.3251 | -.2523 |        |        |        |        |        |        |        |       |
| 110.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 120.000 | -.1808 | -.1815 | .1908  | .1097  | -.4701 | -.3095 | -.3254 |        |        |        |        |        |        |        |       |
| 135.000 |        |        | .2429  | .2138  | -.4357 | -.2415 | -.2863 |        |        |        |        |        |        |        |       |
| 150.000 | -.0897 | -.0189 | .2309  | .1717  | -.3335 | -.2216 | -.2716 |        |        |        |        |        |        |        |       |
| 165.000 | -.0805 |        | .2041  |        | -.0376 | -.1850 | -.2734 |        |        |        |        |        |        |        |       |
| 180.000 | -.0674 | .0046  | .1918  | .3504  |        |        |        |        |        |        |        |        |        |        |       |

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ORIGINAL PAGE IS POOR

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(XEB831)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 3 ) = 3.983 BETA ( 2 ) = .184 MACH = .89870 Q = 599.00 P = 1059.5 RN/L = 3.5709

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770   | .2040   | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|---------|---------|--------|--------|--------|-------|-------|
| PHI     | .000   | .6711 | .2239 | .1094 | .0153  |        |       | -.0848 | -.1023  | -.1343  | -.0489 | .0088  | .0675  | .0872 |       |
| 20.000  |        |       | .2418 | .1103 | -.0066 | -.0592 |       | -.0970 | -.1160  | -.1317  | -.0440 | .0211  | .0561  | .1135 |       |
| 40.000  |        |       | .3456 | .1349 | .0361  | -.0154 |       | -.0897 | -.1317  | -.1832  |        |        |        |       |       |
| 55.000  |        |       | .3916 | .1853 | .0969  | .0333  |       | -.0725 | -.1817  |         |        |        |        |       |       |
| 70.000  |        |       | .3979 | .1893 | .0917  | .0585  |       | -.0685 | -.2044  | -.6636  | -.1377 | -.0360 | .0057  |       |       |
| 90.000  |        | .5374 | .4109 | .2025 | .0964  | .0809  |       | -.0555 | -.3171  | -.7218  | -.1557 | -.0270 | .0106  |       |       |
| 120.000 |        |       | .4154 | .2501 | .1481  | .2023  |       | .1205  | -.3926  | -.7048  | -.2658 | -.0213 | -.0143 |       |       |
| 140.000 |        |       |       |       |        |        |       | .5201  | -.5120  | -.10401 | -.3728 | .0405  | .0008  |       |       |
| 150.000 |        |       | .3852 | .2761 | .1827  | .2516  |       |        | -.8848  |         |        |        |        |       |       |
| 162.000 |        |       |       |       |        |        |       |        | .1894   |         |        |        |        |       |       |
| 169.000 |        |       |       |       |        |        |       |        | .2414   |         |        |        |        |       |       |
| 174.000 |        |       |       |       |        |        |       | .6065  | -.9811  | -.9456  | -.2312 | .0360  | .0072  |       |       |
| 180.000 | 1.2074 | .5648 | .3602 | .2730 | .1999  | .2752  | .7236 | .5807  | -1.0231 | -.9291  | -.1751 | .0320  | .0058  |       |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790  | .9210  | .9600 | .9990  | 1.0180  | 1.0460  |        |        |        |       |       |

|         |        |        |        |        |        |        |        |        |       |       |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--|--|--|--|--|
| PHI     | .000   | .0117  | -.0662 | -.1727 | -.1720 | -.1898 | .0032  |        | .3577 | .1243 |  |  |  |  |  |
| 40.000  |        |        | -.0430 | -.1492 | -.1053 | -.1861 | -.0781 |        | .2844 | .0401 |  |  |  |  |  |
| 70.000  |        | -.4402 | -.1413 | .0394  | -.2758 | -.4661 | -.1931 |        |       |       |  |  |  |  |  |
| 90.000  |        | -.1765 | -.3432 | -.0365 | -.3595 | -.4580 | -.2507 |        |       |       |  |  |  |  |  |
| 105.000 |        |        | .0397  | .0536  | -.4628 | -.5281 | -.2644 |        |       |       |  |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        | -.3645 |       |       |  |  |  |  |  |
| 120.000 | -.1187 | -.1365 | .1079  | .1789  | -.5491 | -.5399 | -.3153 | -.2740 |       |       |  |  |  |  |  |
| 130.000 |        |        | .1632  | .3830  | -.4226 | -.4219 | -.2831 |        |       |       |  |  |  |  |  |
| 140.000 | -.0650 | -.0307 | .1905  | .4540  | -.3552 | -.4608 | -.3195 |        |       |       |  |  |  |  |  |
| 150.000 | -.0572 |        | .2014  | .4540  | -.3552 | -.4608 | -.3195 |        |       |       |  |  |  |  |  |
| 180.000 | -.0511 | .0031  | .2111  | .4234  | -.1534 | -.3301 | -.2719 |        |       |       |  |  |  |  |  |

ALPHA ( 3 ) = 3.979 BETA ( 3 ) = .4243 MACH = .89870 Q = 599.00 P = 1059.5 RN/L = 3.5709

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|--------|--------|-------|--------|--------|--------|--------|--------|-------|-------|-------|
| PHI     | .000  | .6527 | .2117 | .1061 | .0057  |        |       | -.0856 | -.1082 | -.1411 | -.0611 | .0054  | .0654 | .0787 |       |
| 20.000  |       |       | .2058 | .0794 | -.0250 | -.0637 |       | -.0993 | -.1274 | -.1432 | -.0828 | .0075  | .0432 | .1080 |       |
| 40.000  |       |       | .2565 | .0869 | -.0006 | -.1798 |       | -.0979 | -.1432 | -.2168 |        |        |       |       |       |
| 55.000  |       |       | .2752 | .0857 | .0116  | -.0353 |       | -.1194 | -.2028 |        |        |        |       |       |       |
| 70.000  |       |       | .2765 | .0768 | -.0037 | -.0337 |       | -.1293 | -.2608 | -.7240 | -.1400 | -.0317 | .0025 |       |       |
| 90.000  |       | .3786 | .2957 | .0935 | .0034  | .0662  |       | -.1312 | -.4082 | -.7938 | -.1537 | -.0150 | .0102 |       |       |
| 120.000 |       |       | .3283 | .1660 | .0626  | .1285  |       | .0185  | -.5199 | -.7794 | -.2754 | .0148  | .0043 |       |       |



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8831)

ALPHA ( 4 ) = 8.057 BETA ( 1 ) = -3.860

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

180.000 1.1578 .4125 .2122 .1685 .1036 .2004 .4958 -.9012 -.6382 -.4938 -.1213 -.0037

X/LB

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .1470 .0966 .0224 -.0838 -.1220 -.1919 -.0035 .3959 .1346

40.000 .1508 .0506 -.0483 -.0553 -.0553 -.1796 -.0810 .3157 .0557

70.000 -.3143 -.5740 -.3534 .0342 .1767 .3922 .2191

90.000 -.2557 -.4946 -.1524 .0233 .2187 .3489 .4187

105.000 .0060 .0328 -.2915 -.3711 -.5178

110.000 .0790 .0101 -.3039 -.3633 -.3337

120.000 .0802 .1832 .4248 .2936 .3109

135.000 -.1586 -.1387 .0840 .2672 .3459 .2616 .2871

150.000 -.1411 .0808 -.0922 -.2011 .2663

165.000 -.1227 -.0843 .3090

180.000

ALPHA ( 4 ) = 8.054 BETA ( 2 ) = .187 MACH = .89807 Q = 598.57 P = 1060.2 RV/L = 3.5677

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.1649 .8143 .3701 .2314 .1251 .0379 .0078 -.0031

20.000 .3869 .2258 .1077 .0688 .0040 .0040 .0040 .0040

40.000 .4447 .2456 .1421 .0688 .0640 .0640 .0640 .0640

55.000 .4302 .2291 .1303 .0640 .0640 .0640 .0640 .0640

70.000 .3959 .1958 .0961 .0733 .0733 .0733 .0733 .0733

90.000 .3758 .1863 .0909 .0863 .0863 .0863 .0863 .0863

120.000 .3342 .1837 .0899 .1640 .1640 .1640 .1640 .1640

140.000 .2741 .1788 .0947 .1931 .1931 .1931 .1931 .1931

150.000 .2059 .1754 .2059 .1754 .1754 .1754 .1754 .1754

162.000 .5573 .5573 .5573 .5573 .5573 .5573 .5573 .5573

165.000 .6632 .6632 .6632 .6632 .6632 .6632 .6632 .6632

169.000 .5330 .5330 .5330 .5330 .5330 .5330 .5330 .5330

174.000 .5330 .5330 .5330 .5330 .5330 .5330 .5330 .5330

180.000 .5330 .5330 .5330 .5330 .5330 .5330 .5330 .5330

X/LB

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .1499 .0982 .0232 -.0859 -.1245 -.1854 .0007

40.000 .1575 .0480 -.0484 -.0687 -.1056 -.1056 -.0621

.3975 .1320 .2888 .0383

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEBB31)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 8.064 BETA ( 2 ) = .187

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| 70.000  | -.3138 | -.6327 | -.3608 | -.0224 | -.2379 | -.4283 | -.3695 |        |        |        |
| 90.000  | -.2522 | -.4738 | -.1903 | -.0322 | -.3257 | -.3884 | -.5622 |        |        |        |
| 105.000 |        |        | -.0539 | -.0278 | -.4160 | -.4301 | -.5503 |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.3010 |        |        |
| 120.000 | -.2158 | -.2556 | -.0136 | .0491  | -.5343 | -.4423 | -.4339 | -.2524 |        |        |
| 135.000 |        |        | .0595  | .2765  | -.4695 | -.3740 | -.3858 |        |        |        |
| 150.000 | -.1316 | -.1347 | .0966  | .4182  | -.3794 | -.3703 | -.3574 |        |        |        |
| 165.000 | -.1198 |        | .1147  |        | -.1790 | -.3286 | -.2858 |        |        |        |
| 180.000 | -.1101 | -.0789 | .1149  | .3368  |        |        |        |        |        |        |

ALPHA ( 4 ) = 8.059 BETA ( 3 ) = 4.245 MACH = .98807 Q = 598.57 P = 1080.2 RN/L = 3.5677

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120  | .1580 | .1860  | .1770    | .2040    | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|--------|-------|--------|----------|----------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |        |       |        |          |          |        |        |        |        |       |
| 20.000  | 1.1523 | .7991 | .3660 | .2214 | .1149 |        |       | -.0027 | -.0335   | -.0536   | -.0100 | .0505  | .1237  | .1412  |       |
| 40.000  |        |       | .3498 | .1909 | .0843 | .0181  |       | -.0222 | -.0502   | -.0949   | -.1498 | -.1022 | .0264  | .0826  | .1644 |
| 55.000  |        |       | .3488 | .1747 | .0840 | .0186  |       | -.0896 | -.1663   | -.2089   | -.2035 | -.1119 | -.0435 |        |       |
| 70.000  |        |       | .3071 | .1193 | .0431 | -.0142 |       | -.0893 | -.3358   | -.7615   | -.1915 | -.0895 | -.0252 |        |       |
| 90.000  |        | .3300 | .2734 | .0854 | .0070 | .0079  |       | -.0795 | -.4731   | -.7419   | -.2743 | -.0630 | -.0166 |        |       |
| 120.000 |        |       | .2701 | .0901 | .0052 | .0227  |       | .0590  | -.6438   |          |        |        |        |        |       |
| 140.000 |        |       | .2550 | .1168 | .0263 | .1209  |       |        | -.1.0156 | -.6490   | -.4289 | -.0420 | .0004  |        |       |
| 150.000 |        |       | .2300 | .1568 | .0586 | .1668  |       | .4139  | .0764    |          |        |        |        |        |       |
| 162.000 |        |       |       |       |       |        |       |        | .1282    |          |        |        |        |        |       |
| 165.000 |        |       |       |       |       |        |       |        |          | -.1.0478 | -.7050 | -.4511 | -.0435 | .0049  |       |
| 174.000 |        |       |       |       |       |        |       |        |          | -.8653   | -.6883 | -.4629 | -.0560 | -.0088 |       |
| 180.000 | 1.1523 | .3851 | .2324 | .1459 | .0911 | .2055  | .6236 | .5173  |          |          |        |        |        |        |       |
|         | .6520  | .7290 | .7790 | .8210 | .8790 | .9210  | .9600 | .9990  | 1.0180   | 1.0460   |        |        |        |        |       |

| X/LB    | .1400  | .0963  | .0212  | -.0922 | -.1231 | -.1766 | -.0010 |
|---------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |
| 40.000  | .1431  |        | .0413  | -.0491 | -.0641 | -.1911 | -.0620 |
| 70.000  | -.3146 | -.5816 | -.3255 | -.0927 | -.3125 | -.4398 | -.4988 |
| 90.000  | -.2414 | -.4408 | -.2366 | -.0952 | -.3922 | -.4098 | -.5405 |
| 105.000 |        |        | -.1342 | -.0761 | -.5388 | -.4642 | -.5654 |
| 110.000 |        |        |        |        |        |        |        |
| 120.000 | -.1585 | -.2438 | -.0589 | -.0139 | -.5973 | -.5530 | -.5190 |
| 125.000 |        |        | .0420  | .2537  | -.5110 | -.5038 | -.4833 |
| 150.000 | -.1073 | -.0945 | .1059  | .3548  | -.3985 | -.4930 | -.4005 |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8831)

ALPHA ( 4 ) = 8.059 BETA ( 3 ) = 4.245

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 -.1103 .1117  
180.000 -.1248 -.0831 .0984 .3254 - .2448 -.4724 -.3083

ALPHA ( 5 ) = 11.980 BETA ( 1 ) = -3.854 MACH = .69717 Q = 598.01 P = 1061.4 RN/L = 3.5714

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1860 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.0986 .9288 .5057 .3436 .2296  
20.000 .5520 .3614 .2340 .1360  
40.000 .6210 .4011 .2898 .1968  
55.000 .5723 .3636 .2531 .1538  
70.000 .4931 .2937 .1849 .1484  
90.000 .5616 .4260 .2492 .1648 .1389  
120.000 .2978 .1480 .0608 .1387  
140.000 .1651 .0852 .0211 .1387  
151.000 .0758  
162.000 .0848  
165.000 .1166  
169.000 .0630  
174.000 .0536  
180.000 .0609  
PHI .1883  
140.000 .5630  
151.000 .2370  
162.000 .2373  
165.000 .0557  
169.000 .0543  
174.000 .0564  
180.000 .0181  
PHI -.0606  
20.000 -.4166  
40.000 -.1986  
55.000 -.1374  
70.000 -.5338  
90.000 -.2404  
120.000 -.1722  
140.000 -.4260  
151.000 -.5283  
162.000 -.6596  
165.000 -.3785  
169.000 -.5298  
174.000 -.5641  
180.000 -.5117  
PHI -.2326  
20.000 .1900  
40.000 .1045  
55.000 .1208  
70.000 .1841  
90.000 -.0343  
120.000 -.0585  
140.000 -.2592  
151.000 -.0886  
162.000 -.0459  
165.000 -.1951  
169.000 -.0459  
174.000 -.0121  
180.000 -.1878

X/LB 1.0986 .2531 .0906 .0724 .0239 .1470 .6576

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .2228 .1718 .1022 -.0165 -.0774 -.1962 -.0294  
40.000 .2509 .1345 .0332 -.0205 -.1941 -.1202  
70.000 -.4491 -.7374 -.2437 -.0454 -.2689 -.4103 -.6265  
90.000 -.3474 -.5792 -.1432 .0113 -.2807 -.3864 -.5507  
105.000 .0304 -.0304 .0436 -.3445 -.4438 -.5692  
110.000 .0180 .1005 .3887 -.4584  
120.000 -.3786 -.3085 -.0180 .1879 .3964 .3823  
135.000 .0147 .1879 .3964 .3823  
150.000 -.2588 -.2338 .0241 .2925 .3544 .3577  
165.000 .2126 .0054 .0054 .1421 .2709 .2835  
180.000 -.1704 -.1376 .0682 .3312

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (XE8831)

ALPHA ( 5 ) = 11.930 BETA ( 2 ) = .184 MACH = .89717 Q = 598.01 P = 1061.4 RN/L = 3.5714

## SECTION 1 : ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB     | PHI  | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|----------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 20.000   | .000 | .9327 | .5086 | .3486 | .2310 |       | .1254 | .0822 | .0571 | .0280 | .0579 | .1139 | .1909 | .2236 |       |       |
| 40.000   | .000 |       | .5172 | .3404 | .2168 |       | .1420 | .0765 | .0394 |       | .0084 | .0020 | .0898 | .1611 | .2529 |       |
| 55.000   | .000 |       | .4369 | .2435 | .1384 |       | .0564 | .0276 | .0900 |       |       |       |       |       |       |       |
| 70.000   | .000 |       | .3675 | .1826 | .0784 |       | .0762 | .0209 | .1203 |       | .5203 | .2566 | .1891 | .0842 |       |       |
| 90.000   | .000 | .4110 | .3205 | .1514 | .0659 |       | .0748 | .0058 | .2102 |       | .6459 | .2483 | .1948 | .0792 |       |       |
| 120.000  | .000 |       | .2366 | .0964 | .0208 |       | .1228 | .1375 | .3412 |       | .7405 | .4217 | .3103 | .1349 |       |       |
| 140.000  | .000 |       |       |       |       |       |       |       | .4924 |       |       |       |       |       |       |       |
| 150.000  | .000 |       | .1498 | .0836 | .0160 |       | .1410 | .4876 | .7211 |       | .5967 | .4982 | .1917 | .0401 |       |       |
| 160.000  | .000 |       |       |       |       |       |       |       | .1628 |       |       |       |       |       |       |       |
| 170.000  | .000 |       |       |       |       |       |       |       | .1798 |       |       |       |       |       |       |       |
| 180.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 190.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 200.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 210.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 220.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 230.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 240.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 250.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 260.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 270.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 280.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 290.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 300.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 310.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 320.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 330.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 340.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 350.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 360.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 370.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 380.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 390.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 400.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 410.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 420.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 430.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 440.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 450.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 460.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 470.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 480.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 490.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 500.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 510.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 520.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 530.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 540.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 550.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 560.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 570.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 580.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 590.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 600.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 610.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 620.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 630.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 640.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 650.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 660.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 670.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 680.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 690.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 700.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 710.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 720.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 730.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 740.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 750.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 760.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 770.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 780.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 790.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 800.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 810.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 820.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 830.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 840.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 850.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 860.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 870.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 880.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 890.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 900.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 910.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 920.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 930.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 940.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 950.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 960.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 970.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 980.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 990.000  | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 1000.000 | .000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

X/LB

PHI

20.000 .2289 .1775 .1014 .0153 .0784 .1857 .0157 .4216 .1373  
 40.000 .2232 .1731 .0931 .0275 .0320 .1963 .0993 .2954 .0238  
 60.000 .2176 .1686 .0843 .0501 .0437 .4265 .6970 .4216 .1373  
 80.000 .2120 .1640 .0754 .0762 .0374 .4265 .6970 .4216 .1373  
 100.000 .2064 .1594 .0665 .0974 .0209 .4265 .6970 .4216 .1373  
 120.000 .2008 .1548 .0576 .1186 .0043 .4265 .6970 .4216 .1373  
 140.000 .1952 .1502 .0487 .1398 .0000 .4265 .6970 .4216 .1373  
 160.000 .1896 .1456 .0398 .1610 .0000 .4265 .6970 .4216 .1373  
 180.000 .1840 .1410 .0309 .1822 .0000 .4265 .6970 .4216 .1373  
 200.000 .1784 .1364 .0220 .2034 .0000 .4265 .6970 .4216 .1373  
 220.000 .1728 .1318 .0131 .2246 .0000 .4265 .6970 .4216 .1373  
 240.000 .1672 .1272 .0042 .2458 .0000 .4265 .6970 .4216 .1373  
 260.000 .1616 .1226 .0000 .2670 .0000 .4265 .6970 .4216 .1373  
 280.000 .1560 .1180 .0000 .2882 .0000 .4265 .6970 .4216 .1373  
 300.000 .1504 .1134 .0000 .3094 .0000 .4265 .6970 .4216 .1373  
 320.000 .1448 .1088 .0000 .3306 .0000 .4265 .6970 .4216 .1373  
 340.000 .1392 .1042 .0000 .3518 .0000 .4265 .6970 .4216 .1373  
 360.000 .1336 .0996 .0000 .3730 .0000 .4265 .6970 .4216 .1373  
 380.000 .1280 .0950 .0000 .3942 .0000 .4265 .6970 .4216 .1373  
 400.000 .1224 .0904 .0000 .4154 .0000 .4265 .6970 .4216 .1373  
 420.000 .1168 .0858 .0000 .4366 .0000 .4265 .6970 .4216 .1373  
 440.000 .1112 .0812 .0000 .4578 .0000 .4265 .6970 .4216 .1373  
 460.000 .1056 .0766 .0000 .4790 .0000 .4265 .6970 .4216 .1373  
 480.000 .1000 .0720 .0000 .5002 .0000 .4265 .6970 .4216 .1373  
 500.000 .0944 .0674 .0000 .5214 .0000 .4265 .6970 .4216 .1373  
 520.000 .0888 .0628 .0000 .5426 .0000 .4265 .6970 .4216 .1373  
 540.000 .0832 .0582 .0000 .5638 .0000 .4265 .6970 .4216 .1373  
 560.000 .0776 .0536 .0000 .5850 .0000 .4265 .6970 .4216 .1373  
 580.000 .0720 .0490 .0000 .6062 .0000 .4265 .6970 .4216 .1373  
 600.000 .0664 .0444 .0000 .6274 .0000 .4265 .6970 .4216 .1373  
 620.000 .0608 .0398 .0000 .6486 .0000 .4265 .6970 .4216 .1373  
 640.000 .0552 .0352 .0000 .6698 .0000 .4265 .6970 .4216 .1373  
 660.000 .0496 .0306 .0000 .6910 .0000 .4265 .6970 .4216 .1373  
 680.000 .0440 .0260 .0000 .7122 .0000 .4265 .6970 .4216 .1373  
 700.000 .0384 .0214 .0000 .7334 .0000 .4265 .6970 .4216 .1373  
 720.000 .0328 .0168 .0000 .7546 .0000 .4265 .6970 .4216 .1373  
 740.000 .0272 .0122 .0000 .7758 .0000 .4265 .6970 .4216 .1373  
 760.000 .0216 .0076 .0000 .7970 .0000 .4265 .6970 .4216 .1373  
 780.000 .0160 .0030 .0000 .8182 .0000 .4265 .6970 .4216 .1373  
 800.000 .0104 .0000 .0000 .8394 .0000 .4265 .6970 .4216 .1373  
 820.000 .0048 .0000 .0000 .8606 .0000 .4265 .6970 .4216 .1373  
 840.000 .0000 .0000 .0000 .8818 .0000 .4265 .6970 .4216 .1373  
 860.000 .0000 .0000 .0000 .9030 .0000 .4265 .6970 .4216 .1373  
 880.000 .0000 .0000 .0000 .9242 .0000 .4265 .6970 .4216 .1373  
 900.000 .0000 .0000 .0000 .9454 .0000 .4265 .6970 .4216 .1373  
 920.000 .0000 .0000 .0000 .9666 .0000 .4265 .6970 .4216 .1373  
 940.000 .0000 .0000 .0000 .9878 .0000 .4265 .6970 .4216 .1373  
 960.000 .0000 .0000 .0000 .1009 .0000 .4265 .6970 .4216 .1373  
 980.000 .0000 .0000 .0000 .1040 .0000 .4265 .6970 .4216 .1373  
 1000.000 .0000 .0000 .0000 .1071 .0000 .4265 .6970 .4216 .1373

ALPHA ( 5 ) = 11.975 BETA ( 3 ) = 4.259 MACH = .89717 Q = 598.01 P = 1061.4 RN/L = 3.5714

## SECTION 1 : ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0230 | .0460 | .0700 | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| PHI     |       |       |       |       |        |        |        |        |        |        |        |        |       |       |
| 20.000  | .0000 | .9144 | .4945 | .3353 | .2208  |        | .0703  | .0502  | .0254  | .0454  | .1043  | .1842  | .2124 |       |
| 40.000  | .0000 |       | .4652 | .2967 | .1805  | .1014  | .0521  | .0165  |        |        |        |        |       |       |
| 60.000  | .0000 |       | .4088 | .2506 | .1457  | .0696  | .0168  | -.0529 | -.1184 | -.0709 | .0415  | .1235  | .2214 |       |
| 80.000  | .0000 |       | .3006 | .1200 | .0248  | -.0379 | -.1068 | -.1520 |        |        |        |        |       |       |
| 100.000 | .0000 |       | .2423 | .0749 | -.0212 | .0110  | -.0816 | -.1763 | -.5945 | -.2699 | -.2221 | -.1319 |       |       |
| 120.000 | .0000 | .2593 | .2175 | .0595 | -.0184 | .0219  | -.0653 | -.2806 | -.7191 | -.2087 | -.0880 |        |       |       |
| 140.000 | .0000 |       | .1705 | .0449 | -.0226 | .0979  | -.0764 | -.4378 | -.6790 | -.3556 | -.2375 | -.0519 |       |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

**684 3014**

$$\text{ALPHA} ( 5 ) = 11.975 \quad \text{BETA} ( 3 ) = 4.259$$

(13883X)

SECTION (ORBITER FUSELAGE)

DEPENDENT VARIABLE CP

[illegible]

(XEB832) ( 05 AUG 75 )

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

REFERENCE DATA  
SREF = 26300.0000 SQ.FT. XMRP = 1076.6000 IN. XO  
LREF = 474.8000 IN. YMRP = .0000 IN. YO  
BREF = 936.0600 IN. ZMRP = 375.0000 IN. ZO  
SCALE = .0300

ALPHA ( 1 ) = -4.052 BETA ( 1 ) = -7.850 MACH = .59664 O = 594.68 P = 2386.3 RVL = 4.8170

| DEPENDENT VARIABLE CP          |        |        |        |        |        |        |        |        |        |        |        |        |        |        |      |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|
| SECTION ( 1 ) ORBITER FUSELAGE |        |        |        |        |        |        |        |        |        |        |        |        |        |        |      |
| X/LB                           | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .57  |
| PHI                            | 1.0092 | .1292  | -.2164 | -.2091 | -.2210 | -.2826 | -.2359 | -.1776 | -.1518 | -.2037 | -.1256 | -.0976 | -.0739 | -.0552 | -.06 |
| 20.000                         |        |        | -.1960 | -.2317 | -.2774 | -.3054 | -.2826 | -.2359 | -.2037 | -.3314 | -.2624 | -.1940 | -.1680 | -.1384 | -.13 |
| 40.000                         |        |        | -.0270 | -.2177 | -.2942 | -.3054 | -.3057 | -.3657 | -.3314 | -.1643 | -.1253 | -.0057 | .0582  | .1007  |      |
| 55.000                         |        |        | .2815  | .0568  | -.0203 | -.1199 | -.1443 | -.0372 | -.1253 | -.1788 | -.1593 | -.0417 | .0381  | .0807  |      |
| 70.000                         |        |        | .4469  | .2405  | .1510  | .0859  | -.0119 | -.1932 | -.1427 | -.1934 | -.3095 | -.1066 | -.0367 | -.0100 |      |
| 90.000                         |        | .7369  | .5493  | .3384  | .2334  | .1380  | -.0119 | .1932  | -.1934 | -.3628 | -.3095 | -.1066 | -.0367 | -.0100 |      |
| 120.000                        |        |        | .6200  | .4580  | .3455  | .3222  |        |        |        |        |        |        |        |        |      |
| 140.000                        |        |        | .5718  | .4277  | .3474  | .3469  |        | .5612  | .2481  |        |        |        |        |        |      |
| 151.000                        |        |        |        |        |        |        |        |        | .2569  |        |        |        |        |        |      |
| 162.000                        |        |        |        |        |        |        |        | .5718  |        |        |        |        |        |        |      |
| 165.000                        |        |        |        |        |        |        | .6990  |        |        |        |        |        |        |        |      |
| 169.000                        |        |        |        |        |        |        |        | .3644  |        |        |        |        |        |        |      |
| 174.000                        |        | .7095  | .4398  | .3396  | .2764  | .2867  |        |        |        |        |        |        |        |        |      |
| 180.000                        | 1.0092 | .7095  | .4398  | .3396  | .2764  | .2867  | .6990  | .5718  |        |        |        |        |        |        |      |
| X/LB                           | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |      |
| PHI                            | -.1001 | -.1164 | -.1423 | -.1674 | -.1479 | -.1372 | -.0303 |        |        |        |        |        |        |        |      |
| 40.000                         |        |        | -.1416 | -.1722 | -.1247 | -.1322 | -.0875 |        |        |        |        |        |        |        |      |
| 70.000                         |        |        | .0165  | .1099  | -.1045 | -.1316 | -.1368 |        |        |        |        |        |        |        |      |
| 90.000                         |        |        | .0758  | .1599  | -.1295 | -.1504 | -.1595 |        |        |        |        |        |        |        |      |
| 105.000                        |        |        | .1290  | .2791  | -.2124 | -.1931 | -.2166 |        |        |        |        |        |        |        |      |
| 110.000                        |        |        |        |        |        |        |        | -.2919 |        |        |        |        |        |        |      |
| 120.000                        | .0130  | .0589  | .2192  | .4581  | -.2103 | -.1860 | -.2086 | -.2332 |        |        |        |        |        |        |      |
| 135.000                        |        |        | .2727  | .4544  | -.1468 | -.1179 | -.1852 |        |        |        |        |        |        |        |      |
| 150.000                        | .0096  | .0715  | .2569  | .3374  | -.1241 | -.1014 | -.1844 |        |        |        |        |        |        |        |      |
| 165.000                        | -.0050 |        | .2134  |        | .1069  | -.0715 | -.2490 |        |        |        |        |        |        |        |      |
| 180.000                        | -.0283 | .0321  | .1673  | .3293  |        |        |        |        |        |        |        |        |        |        |      |

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TABULATED PRESSURE DATA - 0A148 (AES 11-073-1)

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AES 11-07310A148) -140A/B/C/R ORB FUSELAGE

(X0832)

ALPHA (1) = -4.036 BETA (2) = -3.835 MACH = .5964 Q = 594.68 P = 2386.3 RW/L = 4.8170

SECTION 11 ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | PHI    | 0.000 | 0.080  | 0.230  | 0.460  | 0.700  | 1.120  | 1.560   | 1.770  | 2.040  | 2.510  | 3.010  | 3.780  | 4.970  | 5.740 |
|---------|--------|-------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|--------|-------|
| 0.000   | 1.0516 | .1636 | -.1855 | -.1871 | -.2053 | -.1643 | -.1358 | -.1112  | -.0824 | -.0575 | -.0412 | -.0375 |        |        |       |
| 20.000  |        |       | -.1689 | -.1928 | -.2448 | -.2389 | -.1991 | -.1688  | -.2663 | -.1335 | -.1082 | -.0982 | -.0988 |        |       |
| 40.000  |        |       | .0053  | -.1923 | -.2576 | -.2599 | -.2969 | -.2012  | -.2009 | -.1892 | -.1822 | -.0426 | -.0268 | -.0719 |       |
| 55.000  |        |       | .2023  | -.0025 | -.0572 | -.1453 | -.1775 | -.1892  | -.2143 | -.0777 | -.0109 | -.0109 | -.0279 | -.0581 |       |
| 70.000  |        |       | .3369  | .1305  | .0574  | .0051  | -.1077 | -.2764  | -.2439 | -.2019 | -.0242 | -.0136 |        |        |       |
| 90.000  |        | .6048 | .4304  | .2169  | .1211  | .0418  | -.1025 | -.2691  | -.4109 | -.2743 | -.0904 | -.0242 | -.0136 |        |       |
| 120.000 |        |       | .5289  | .3682  | .2543  | .2336  | .5021  | .1576   |        |        |        |        |        |        |       |
| 140.000 |        |       | .5428  | .4155  | .3287  | .3278  |        | .1924   |        |        |        |        |        |        |       |
| 151.000 |        |       |        |        |        |        |        |         |        |        |        |        |        |        |       |
| 162.000 |        |       |        |        |        |        |        |         |        |        |        |        |        |        |       |
| 165.000 |        |       |        |        |        |        | .6963  | .5618   | -.9286 | -.2120 | -.1020 | -.0306 | .0034  |        |       |
| 169.000 |        |       |        |        |        |        |        |         |        |        |        |        |        |        |       |
| 174.000 |        |       |        |        |        |        |        |         |        |        |        |        |        |        |       |
| 180.000 | 1.0516 | .7299 | .4765  | .3838  | .3140  | .3212  | .4716  | -1.1538 | -.2021 | -.1001 | -.0365 | -.0004 |        |        |       |
| X/LB    | .6520  | .7290 | .7790  | .8210  | .8790  | .9210  | .9603  | .9990   | 1.0180 | 1.0460 |        |        |        |        |       |

PHI

| X/LB    | PHI    | 0.000 | 0.080  | 0.230  | 0.460  | 0.700  | 1.120  | 1.560   | 1.770  | 2.040  | 2.510  | 3.010  | 3.780  | 4.970  | 5.740 |
|---------|--------|-------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|--------|-------|
| 0.000   | 1.0516 | .1636 | -.1855 | -.1871 | -.2053 | -.1643 | -.1358 | -.1112  | -.0824 | -.0575 | -.0412 | -.0375 |        |        |       |
| 20.000  |        |       | -.1689 | -.1928 | -.2448 | -.2389 | -.1991 | -.1688  | -.2663 | -.1335 | -.1082 | -.0982 | -.0988 |        |       |
| 40.000  |        |       | .0053  | -.1923 | -.2576 | -.2599 | -.2969 | -.2012  | -.2009 | -.1892 | -.1822 | -.0426 | -.0268 | -.0719 |       |
| 55.000  |        |       | .2023  | -.0025 | -.0572 | -.1453 | -.1775 | -.1892  | -.2143 | -.0777 | -.0109 | -.0109 | -.0279 | -.0581 |       |
| 70.000  |        |       | .3369  | .1305  | .0574  | .0051  | -.1077 | -.2764  | -.2439 | -.2019 | -.0242 | -.0136 |        |        |       |
| 90.000  |        | .6048 | .4304  | .2169  | .1211  | .0418  | -.1025 | -.2691  | -.4109 | -.2743 | -.0904 | -.0242 | -.0136 |        |       |
| 120.000 |        |       | .5289  | .3682  | .2543  | .2336  | .5021  | .1576   |        |        |        |        |        |        |       |
| 140.000 |        |       | .5428  | .4155  | .3287  | .3278  |        | .1924   |        |        |        |        |        |        |       |
| 151.000 |        |       |        |        |        |        |        |         |        |        |        |        |        |        |       |
| 162.000 |        |       |        |        |        |        |        |         |        |        |        |        |        |        |       |
| 165.000 |        |       |        |        |        |        | .6963  | .5618   | -.9286 | -.2120 | -.1020 | -.0306 | .0034  |        |       |
| 169.000 |        |       |        |        |        |        |        |         |        |        |        |        |        |        |       |
| 174.000 |        |       |        |        |        |        |        |         |        |        |        |        |        |        |       |
| 180.000 | 1.0516 | .7299 | .4765  | .3838  | .3140  | .3212  | .4716  | -1.1538 | -.2021 | -.1001 | -.0365 | -.0004 |        |        |       |
| X/LB    | .6520  | .7290 | .7790  | .8210  | .8790  | .9210  | .9603  | .9990   | 1.0180 | 1.0460 |        |        |        |        |       |

ALPHA (1) = -4.020 BETA (3) = .192 MACH = .5964 Q = 594.68 P = 2386.3 RW/L = 4.8170

SECTION 11 ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | PHI    | 0.000 | 0.080  | 0.230  | 0.460  | 0.700  | 1.120  | 1.560  | 1.770  | 2.040  | 2.510  | 3.010  | 3.780  | 4.970 | 5.740 |
|---------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| 0.000   | 1.0621 | .1740 | -.1744 | -.1766 | -.2314 | -.2129 | -.1570 | -.1318 | -.1044 | -.0706 | -.0491 | -.0363 | -.0332 |       |       |
| 20.000  |        |       | -.1676 | -.1739 | -.2260 | -.2241 | -.1788 | -.1494 | -.1212 | -.0908 | -.0661 | -.0643 | -.0674 |       |       |
| 40.000  |        |       | -.0174 | -.1907 | -.2328 | -.2241 | -.2388 | -.2172 | -.1499 | -.0908 | -.0661 | -.0643 | -.0674 |       |       |
| 55.000  |        |       | .1210  | -.0584 | -.1066 | -.1705 | -.2039 | -.2224 | -.2177 | -.0675 | -.0064 | -.0912 |        |       |       |
| 70.000  |        |       | .2223  | .0345  | -.0247 | -.0684 | -.1728 | -.2449 | -.2177 | -.0675 | -.0064 | -.0912 |        |       |       |
| 90.000  |        | .4530 | .3031  | .0959  | .0170  | -.0594 | -.1876 | -.3613 | -.2613 | -.1076 | -.0133 | -.0371 |        |       |       |
| 120.000 |        |       | .4227  | .2547  | .1441  | .1385  | -.0464 | -.3467 | -.2885 | -.2429 | -.0401 | -.0085 |        |       |       |



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB832)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 1 ) = -4.028 BETA ( 4 ) = 4.273

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

180.000 1.0385 .6975 .4861 .3828 .3113 .3237 .4915 -1.1197 -.2007 -.0995 -.0356 -.0024

X/LB

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 -.0940 -.1103 -.1461 -.1622 -.1398 -.1327 -.0219 .2491 .0269  
40.000 -.1179 -.1262 -.1450 -.1185 -.1094 -.1094 -.0469 .1643 -.0477  
70.000 -.0653 -.1296 -.0997 -.0341 -.2350 -.2167 -.1952

90.000

-.0303 -.0786 -.0462 -.0355 -.2864 -.2624 -.2218

105.000

-.0079 -.0275 -.4388 1.3244 -.2892

110.000

-.3268  
120.000 -.0296 -.0461 .0204 .0189 -.5619 -.4599 -.4050 -.3084  
135.000 .1364 .2818 -.4343 -.3344 -.3204

150.000

.0111 .0410 .1792 .4703 -.3592 -.3176

165.000

.0171 .1928 -.2046 -.3405 -.2822

180.000

.0185 .0850 .2262 .4609

ALPHA ( 1 ) = -4.045 BETA ( 5 ) = 8.346 MACH = .59664 Q = 594.68 P = 2386.3 RV/L = 4.8170

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 .9909 .1176 -.2079 -.1944 -.2384 -.1862 -.1595 -.1544 -.1717 -.1171 -.0941 -.0357 -.0409 -.0313

20.000

-.2083 -.1953 -.2395 -.2076

40.000

-.1299 -.2133 -.2594 -.1961

60.000

.0521 -.1704 -.1959 -.2094

80.000

-.0044 -.1552 -.1922 -.1893

100.000

.0963 .0408 .1403 -.2078 -.2264 -.3427

120.000

.1628 -.0068 -.1105 -.1067

140.000

.2942 .2206 .1183 .1074

160.000

-.2617  
180.000 .5100 .5100

182.000

.3739

185.000

.5444

187.000

.9909 .6275 .4336 .3326 .2636 .2745

190.000

.3957

192.000

.9990 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

194.000

-.1447 -.2284 -.1353 -.0790 -.0496

196.000

.2377 .0163

198.000

.1431 -.0630

200.000

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(X08832)

ALPHA ( 1 ) = -4.045 BETA ( 5 ) = 8.346

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

70.000 -.0858 -.1589 -.1405 -.0721 -.2701 -.2341 -.2024  
 90.000 -.0548 -.1145 -.1085 -.0905 -.3307 -.2849 -.2485  
 105.000 -.0589 -.0589 -.0544 -.0644 -.4892 -.3516 -.3013  
 110.000  
 120.000 -.0660 -.1043 -.0796 -.2024 -.7042 -.5535 -.4721  
 135.000 .0276 .1142 -.5805 -.4311 -.3801  
 150.000 -.0517 -.0294 .0727 .4131 -.5252 -.4728 -.3790  
 155.000 -.0401 .0979 -.3447 -.4393 -.2898  
 180.000 -.0320 .0254 .1611 .3277

-.3216  
 -.3226

ALPHA ( 2 ) = .034 BETA ( 1 ) = -7.883 MACH = .59622 Q = 593.85 P = 2386.3 RNU/L = 4.8132

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.0404 .3239 -.0652 -.1115 -.1382 -.1951  
 20.000 -.0240 -.0924 -.1733 -.1565  
 40.000 .2079 -.0387 -.1254 -.1075 .0231  
 55.000 .4071 .1916 .1075 .1290  
 70.000 .5035 .2950 .1992 .1290  
 90.000 .5500 .3535 .2443 .1696  
 120.000 .5467 .3974 .2901 .2848  
 140.000 .4536 .3179 .2495 .2646  
 150.000  
 151.000  
 162.000  
 165.000  
 169.000  
 174.000  
 180.000 1.0404 .5808 .3258 .2455 .1854 .2078 .6555  
 .5104  
 .2940  
 .9990 1.0180 1.0460

X/LB

PHI

.000 -.0398 -.0624 -.1006 -.1532 -.1300 -.1311 -.0228  
 40.000 -.0866 -.0859 -.1275 -.1002 -.1139 -.1139 -.0738  
 70.000 -.1132 -.1243 -.0329 .1012 -.1029 -.1199 -.1310  
 90.000 -.0678 -.0576 .0331 .1534 .1271 .1507 .1628  
 105.000 .0873 .2902 .1931 .1823 .2074  
 110.000  
 120.000 -.0941 -.0238 .1696 .4446 .2212 .1850 .1921  
 135.000 .2234 .3207 .1479 .1437 .2043  
 150.000 -.0541 .0189 .2134 .2415 .1916 .1332 .2016

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XE8832)

ALPHA ( 2 ) = .034 BETA ( 1 ) = -7.883

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 -.0493 .1742  
180.000 -.0597 -.0002 .1404 .2761 .0767 -.0943 -.2506

ALPHA ( 2 ) = .043 BETA ( 2 ) = -3.857 MACH = .59822 Q = 593.85 P = 2386.3 RN/L = 4.8132

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1650 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.0762 .3570 -.0303 -.0833 -.1157  
20.000 -.0020 -.0661 -.0661 -.1399 -.1572  
40.000 .1728 -.0405 -.1114 -.1333 -.1796  
55.000 .3173 .1225 .0456 -.0225 -.0878  
70.000 .3872 .1887 .1088 .0431 -.0697  
90.000 .4402 .2397 .1332 .0783 -.0617  
120.000 .4719 .3175 .2181 .2176 .0833  
140.000 .4313 .3133 .2345 .2522 .4636  
150.000  
151.000  
162.000  
165.000  
169.000  
174.000  
180.000.1023  
.1194

-1.0975 -2.598 -1.356 -0.573 -0.295

.4997

.6418

.3993

-1.3235 -2.416 -1.285 -0.590 -0.297

.9990 1.0180 1.0460

X/LB

PHI

.000  
40.000  
70.000  
90.000  
105.000  
110.000  
120.000  
135.000  
150.000  
165.000  
180.000.2567 .0150  
.1928 .0017-.3088  
-.2536

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XE8832)

ALPHA ( 2 ) = .045 BETA ( 3 ) = .186 MACH = .59622 Q = 593.85 P = 2386.3 RV/L = 4.8132

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230  | .0460  | .0700  | .1120  | .1580 | .1660  | .1770  | .2040    | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|--------|--------|--------|--------|--------|-------|--------|--------|----------|--------|--------|--------|--------|-------|
| PHI     | .000  | 1.0812 | .3605  | -.0247 | -.0698 | -.1206 |       | -.1168 | -.1005 | -.0775   | -.0515 | -.0221 | .0016  | -.0066 |       |
| 20.000  |       |        | -.0083 | -.0651 | -.1362 | -.1462 |       | -.1308 | -.1139 | -.0909   | -.0418 | -.0221 | -.0169 | .0029  |       |
| 40.000  |       |        | .1230  | -.0552 | -.1066 | -.1189 |       | -.1509 | -.1481 |          |        |        |        |        |       |
| 55.000  |       |        | .2205  | .0505  | -.0132 | -.0767 |       | -.1334 | -.1796 |          |        |        |        |        |       |
| 70.000  |       |        | .2674  | .0839  | .0110  | -.0284 |       | -.1381 | -.2201 | -.2216   | -.0916 | -.0290 | .0035  |        |       |
| 90.000  |       | .4441  | .3143  | .1193  | .0299  | -.0099 |       | -.1502 | -.3213 | -.2549   | -.1136 | -.0399 | -.0035 |        |       |
| 120.000 |       |        | .3759  | .2226  | .1214  | .1283  |       | -.0341 | -.3555 | -.2985   | -.2386 | -.0482 | -.0167 |        |       |
| 140.000 |       |        |        |        |        |        |       |        | -.4057 |          |        |        |        |        |       |
| 150.000 |       |        | .3851  | .2816  | .1913  | .2158  |       | .3659  | -.5598 | -.3100   | -.1236 | -.0475 | -.0179 |        |       |
| 151.000 |       |        |        |        |        |        |       |        | -.0139 |          |        |        |        |        |       |
| 162.000 |       |        |        |        |        |        |       |        | .0262  |          |        |        |        |        |       |
| 165.000 |       |        |        |        |        |        |       |        |        | -.1.0751 | -.2450 | -.1201 | -.0447 | -.0160 |       |
| 163.000 |       |        |        |        |        |        |       |        |        |          |        |        |        |        |       |
| 174.000 |       |        |        |        |        |        |       |        |        |          |        |        |        |        |       |
| 180.000 |       |        |        |        |        |        |       |        |        |          |        |        |        |        |       |

X/LB 1.0812 .5871 .3750 .2958 .2226 .2528 .6259 .4654 .4439 .9990 1.0180 1.0460

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230  | .0460  | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|--------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | 1.0601 | .3347  | -.0432 | -.0840 | -.1295 |       | -.1206 | -.1074 | -.0859 | -.0571 | -.0270 | -.0033 | -.0134 |       |
| 20.000  |       |        | -.0418 | -.0856 | -.1420 | -.1461 |       | -.1287 | -.1208 | -.0908 | -.0387 | -.0161 | -.0154 | .0105  |       |
| 40.000  |       |        | .0459  | -.0923 | -.1318 | -.1295 |       | -.1427 | -.1426 |        |        |        |        |        |       |
| 55.000  |       |        | .1125  | -.0323 | -.0807 | -.1209 |       | -.1754 | -.2088 |        |        |        |        |        |       |
| 70.000  |       |        | .1509  | -.0110 | -.0508 | -.0981 |       | -.1976 | -.2702 | -.2482 | -.1086 | -.0341 | -.0043 |        |       |
| 90.000  |       | .2789  | .1938  | .0046  | -.0612 | -.1000 |       | -.2275 | -.3976 | -.2794 | -.1288 | -.0406 | -.0039 |        |       |
| 120.000 |       |        | .2669  | .1169  | .0191  | .0355  |       | -.1554 | -.4433 | -.3340 | -.2607 | -.0574 | -.0227 |        |       |

ALPHA ( 2 ) = .041 BETA ( 4 ) = 4.251 MACH = .59622 Q = 593.85 P = 2386.3 RV/L = 4.8132

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230  | .0460  | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|--------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | 1.0601 | .3347  | -.0432 | -.0840 | -.1295 |       | -.1206 | -.1074 | -.0859 | -.0571 | -.0270 | -.0033 | -.0134 |       |
| 20.000  |       |        | -.0418 | -.0856 | -.1420 | -.1461 |       | -.1287 | -.1208 | -.0908 | -.0387 | -.0161 | -.0154 | .0105  |       |
| 40.000  |       |        | .0459  | -.0923 | -.1318 | -.1295 |       | -.1427 | -.1426 |        |        |        |        |        |       |
| 55.000  |       |        | .1125  | -.0323 | -.0807 | -.1209 |       | -.1754 | -.2088 |        |        |        |        |        |       |
| 70.000  |       |        | .1509  | -.0110 | -.0508 | -.0981 |       | -.1976 | -.2702 | -.2482 | -.1086 | -.0341 | -.0043 |        |       |
| 90.000  |       | .2789  | .1938  | .0046  | -.0612 | -.1000 |       | -.2275 | -.3976 | -.2794 | -.1288 | -.0406 | -.0039 |        |       |
| 120.000 |       |        | .2669  | .1169  | .0191  | .0355  |       | -.1554 | -.4433 | -.3340 | -.2607 | -.0574 | -.0227 |        |       |

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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ALPHA ( 2 ) = .041 BETA ( 4 ) = 4.251

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SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|---------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |         |        |        |        |        |       |
| 140.000 |        |       |       |       |       |       |       |       |        |         |        |        |        |        |       |
| 150.000 |        |       | .3201 | .2311 | .1480 | .1483 |       | .2590 | -.1415 | -.4806  | -.2953 | -.1349 | -.0560 | -.0298 |       |
| 151.000 |        |       |       |       |       |       |       |       | -.0891 |         |        |        |        |        |       |
| 162.000 |        |       |       |       |       |       |       |       |        |         |        |        |        |        |       |
| 165.000 |        |       |       |       |       |       |       |       |        |         |        |        |        |        |       |
| 169.000 |        |       |       |       |       |       |       | .4057 |        | -1.0718 | -.2468 | -.1323 | -.0591 | -.0307 |       |
| 174.000 |        |       |       |       |       |       |       |       |        |         |        |        |        |        |       |
| 180.000 | 1.0601 | .5653 | .3623 | .2747 | .2188 | .2381 | .5616 | .4208 |        | -1.2745 | -.2374 | -.1271 | -.0564 | -.0307 |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460  |        |        |        |        |       |

PHI

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770 | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|-------|-------|-------|-------|
| 140.000 |        |        |        |        |        |        |        |        |       |        |       |       |       |       |       |
| 150.000 |        |        | .0967  | .1597  | .1261  | .1170  | -.0167 |        | .2612 | .0209  |       |       |       |       |       |
| 162.000 |        |        | -.0784 | -.1161 | -.1013 | -.0970 | -.0485 |        | .1547 | -.0523 |       |       |       |       |       |
| 165.000 |        |        | -.2157 | -.1446 | -.2445 | -.2277 | -.2063 |        |       |        |       |       |       |       |       |
| 169.000 |        |        | -.1377 | -.0849 | -.0537 | -.3060 | -.2634 | -.2333 |       |        |       |       |       |       |       |
| 174.000 |        |        | -.0326 | -.0493 | -.4396 | -.3310 | -.2977 |        |       |        |       |       |       |       |       |
| 180.000 | -.0673 | -.0693 | .0152  | .0387  | -.5368 | -.4277 | -.3712 | -.3416 |       |        |       |       |       |       |       |
| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770 | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |

ALPHA ( 2 ) = .035 BETA ( 5 ) = 8.312 MACH = .59622 Q = 593.85 P = 2386.3 RN/L = 4.8132

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230  | .0460  | .0700 | .1120 | .1580  | .1660  | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|-------|-------|--------|--------|-------|-------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |       |       |        |        |       |       |        |        |       |        |        |        |        |        |        |
| 140.000 |       |       |        |        |       |       |        |        |       |        |        |        |        |        |        |
| 150.000 |       |       | .0554  | .0955  | .1492 | .1590 |        | -.1365 |       | -.1241 | -.1023 | -.0745 | -.0489 | -.0219 | -.0283 |
| 162.000 |       |       | -.0746 | -.1058 | .1646 | .1590 |        | -.1467 |       | -.1375 |        |        |        |        |        |
| 165.000 |       |       | -.0279 | -.1187 | .1556 | .1477 |        | -.1559 |       | -.1598 | -.1134 | -.0534 | -.0321 | -.0212 | .0104  |
| 169.000 |       |       | .0098  | .1056  | .1412 | .1618 |        | -.2038 |       | -.2367 |        |        |        |        |        |
| 174.000 |       |       | .0358  | .1087  | .1533 | .1517 |        | -.2412 |       | -.3051 | -.2627 | -.1171 | -.0487 | -.0138 |        |
| 180.000 | .0937 | .0693 | .1021  | .1585  | .1744 |       | -.2922 | -.4533 |       | -.4533 | -.3009 | -.1361 | -.0463 | -.0113 |        |
| X/LB    | .0000 | .0080 | .0230  | .0460  | .0700 | .1120 | .1580  | .1660  | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |

PHI

.5005

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XE8832)

ALPHA ( 2 ) = .035 BETA ( 5 ) = 8.312

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770   | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|-------|-------|
| PHI     |        |        |        |        |        |        |        |        |         |        |        |        |        |       |       |
| 180.000 | 1.0097 | .4891  | .3157  | .2235  | .1683  | .1960  |        | .3232  | -1.3019 | -.2739 | -.1636 | -.1020 | -.0783 |       |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180  | 1.0460 |        |        |        |       |       |
| PHI     |        |        |        |        |        |        |        |        |         |        |        |        |        |       |       |
| .000    | -.0470 | -.0653 | -.1067 | -.1587 | -.1278 | -.1176 | -.0216 |        | .2733   | .0297  |        |        |        |       |       |
| 40.000  | -.0356 | -.0745 | -.1090 | .0967  | .0967  | -.0983 | -.0461 |        | .1473   | -.0552 |        |        |        |       |       |
| 70.000  | -.1807 | -.2326 | -.1873 | -.0990 | -.2740 | -.2411 | -.2098 |        |         |        |        |        |        |       |       |
| 90.000  | -.1255 | -.1634 | -.1249 | -.0934 | -.2508 | -.3084 | -.2620 |        |         |        |        |        |        |       |       |
| 105.000 |        | -.0785 | -.0999 | -.4836 | -.3584 | -.3154 |        |        |         |        |        |        |        |       |       |
| 110.000 |        |        |        |        |        |        | -.3384 |        |         |        |        |        |        |       |       |
| 120.000 | -.0879 | -.1142 | -.0546 | -.1904 | -.6771 | -.5219 | -.4348 | -.3151 |         |        |        |        |        |       |       |
| 135.000 |        |        | .0310  | .0844  | -.5913 | -.4317 | -.3754 |        |         |        |        |        |        |       |       |
| 150.000 | -.0688 | -.0475 | .0628  | .3525  | -.5602 | -.4880 | -.3785 |        |         |        |        |        |        |       |       |
| 165.000 | -.0693 | .0771  |        |        | -.4136 | -.4668 | -.2875 |        |         |        |        |        |        |       |       |
| 180.000 | -.0763 | -.0135 | .1270  | .2733  |        |        |        |        |         |        |        |        |        |       |       |

ALPHA ( 3 ) = 4.014 BETA ( 1 ) = -7.879 MACH = .59502 Q = 593.50 P = 2386.4 RAYL = 4.8147

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |         |        |        |        |        |       |
| 20.000  | 1.0297 | .4919  | .0828  | -.0034 | -.0503 |        |        | -.0901 |        | -.0790  | -.0637 | -.0410 | -.0162 | .0201  | .0321 |
| 40.000  |        |        | .1466  | .0299  | -.0540 | -.1036 |        | -.0991 |        | -.0924  |        |        |        |        |       |
| 55.000  |        |        | .3588  | .1297  | .0255  | -.0245 |        | -.0884 |        | -.0915  | -.0501 | -.0060 | .0075  | .0158  | .0459 |
| 70.000  |        |        | .4902  | .2866  | .2009  | .1105  |        | .0271  |        | -.0428  |        |        |        |        |       |
| 90.000  |        | .6950  | .5198  | .3226  | .2209  | .1508  | .0299  | .0299  |        | -.0856  | -.1422 | -.0497 | -.0141 | .0006  |       |
| 120.000 |        |        | .5219  | .3326  | .2382  | .1670  | .0337  | .0337  |        | -.1466  | -.1713 | -.0834 | -.0324 | -.0185 |       |
| 140.000 |        |        | .4567  | .3053  | .2072  | .2163  | .1418  | .1418  |        | -.2197  | -.2936 | -.3053 | -.1744 | -.1762 |       |
| 150.000 |        |        | .3213  | .2017  | .1398  | .1814  | .4645  | .4645  |        | -.3441  | -.4857 | -.2081 | -.1317 | -.1164 |       |
| 162.000 |        |        |        |        |        |        |        |        | .1224  |         |        |        |        |        |       |
| 165.000 |        |        |        |        |        |        |        |        | .0887  |         |        |        |        |        |       |
| 169.000 |        |        |        |        |        |        |        |        |        | -1.2922 | -.3420 | -.1965 | -.1220 | -.0970 |       |
| 174.000 |        |        |        |        |        |        |        | .4498  |        |         |        |        |        |        |       |
| 180.000 |        |        |        |        |        |        |        | .2326  |        | -1.5130 | -.2865 | -.1782 | -.1092 | -.0889 |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460  |        |        |        |        |       |
| PHI     |        |        |        |        |        |        |        |        |        |         |        |        |        |        |       |
| .000    | .0229  | -.0104 | -.0585 | -.1156 | -.1020 | -.1122 | -.0142 |        | .2892  | .0275   |        |        |        |        |       |
| 40.000  | .0065  | -.0336 | -.0811 | -.0732 | -.0911 | -.0601 |        |        | .2166  | .0313   |        |        |        |        |       |

(25883X)

$$\text{ALPHA} (3) = 4.014 \quad \text{BETA} (1) = -7.879$$

AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

## SECTION (1) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |       |        |        |        |        |        |        |
| 70.000  | -.2327 | -.1976 | -.0690 | .0952 | -.0975 | -.1064 | -.1234 |        |        |        |
| 90.000  | -.1705 | -.1383 | -.0026 | .1514 | -.1159 | -.1411 | -.1630 |        |        |        |
| 105.000 |        |        | .0441  | .3140 | -.1906 | -.1813 | -.2137 |        |        |        |
| 110.000 |        |        |        |       |        |        |        |        |        |        |
| 120.000 | -.2231 | -.1116 | .1078  | .4609 | -.2523 | -.1942 | -.1909 | -.3003 |        |        |
| 135.000 |        |        | .1740  | .3272 | -.2485 | -.1809 | -.2274 | -.2406 |        |        |
| 150.000 | -.1141 | -.0263 |        | .1158 | -.2612 | -.1705 | -.2127 |        |        |        |
| 165.000 | -.0944 |        | .1437  |       | .0439  | -.1107 | -.2409 |        |        |        |
| 180.000 | -.0309 | -.0206 | .1173  | .2107 |        |        |        |        |        |        |

## SECTION 11 ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580  | .1660  | .1770  | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|-------|
| FBI     |        |       |       |       |        |        |        |        |        |         |        |        |        |        |       |
| 20,000  | 1.0635 | .5257 | .1198 | .0284 | -.0267 | -.0808 | -.0733 | -.0733 | -.0667 | -.0515  | -.0209 | .0060  | .0060  | .0418  | .0446 |
| 40,000  |        |       | .1571 | .0540 | -.0398 | -.0256 | -.0792 | -.0792 | -.0726 |         |        |        |        |        |       |
| 55,000  |        |       | .3118 | .1000 | .0153  | .0413  | -.0408 | -.0408 | -.0865 | .0010   | .0200  | .0228  | .0228  | .0614  |       |
| 70,000  |        |       | .3970 | .2057 | .1273  | .0739  | -.0424 | -.0424 | -.1003 | -.1880  | -.0875 | -.0424 | -.0284 |        |       |
| 90,000  |        | .5606 | .4128 | .2190 | .1375  | .0843  | .0424  | .0424  | -.2305 | -.2013  | -.1198 | -.0550 | -.0334 |        |       |
| 120,000 |        |       | .4148 | .2361 | .1485  | .0843  | .0691  | .0691  | -.2925 | .3280   | -.2803 | -.1260 | -.1155 |        |       |
| 140,000 |        |       | .3860 | .2446 | .1511  | .1690  |        |        | -.3987 |         |        |        |        |        |       |
| 150,000 |        |       | .3123 | .2007 | .1392  | .1785  |        | .4157  | -.6061 | -.4229  | -.1730 | -.0863 | -.0677 |        |       |
| 162,000 |        |       |       |       |        |        |        |        | .0489  |         |        |        |        |        |       |
| 165,000 |        |       |       |       |        |        |        |        | .0392  |         |        |        |        |        |       |
| 169,000 |        |       |       |       |        |        |        |        |        | -1.2488 | -.3019 | -.1632 | -.0775 | -.0573 |       |
| 174,000 |        |       |       |       |        |        |        | .4413  |        |         |        |        |        |        |       |
| 180,000 | 1.0635 | .4423 | .2313 | .1743 | .1235  | .1593  | .5959  | .3271  |        | -1.4633 | -.2697 | -.1433 | -.0721 | -.0563 |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB832)

ALPHA ( 3 ) = 4.016 BETA ( 2 ) = -3.855

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 -.0497 .1696 -.0612 -.1965 -.2403  
180.000 -.0519 .1695 .3010

ALPHA ( 3 ) = 4.015 BETA ( 3 ) = .196 MACH = .59602 Q = 593.50 P = 2386.4 RN/L = 4.8147

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1560 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.0752 .5254 .1186 .0354 -.0253 -.0637 -.0598 -.0713 -.0466 -.0192 .0113 .0467 .0480  
20.000 .1390 .0432 -.0372 -.0709 -.0698 -.0713 -.0713 -.0713 -.0713 -.0713 -.0713 -.0713 -.0713  
40.000 .2386 .0568 -.0042 -.0362 -.0724 -.0724 -.0724 -.0724 -.0724 -.0724 -.0724 -.0724 -.0724  
55.000 .2849 .1156 .0456 -.0240 -.0917 -.0917 -.0917 -.0917 -.0917 -.0917 -.0917 -.0917 -.0917  
70.000 .2898 .1137 .0366 -.0050 -.1145 -.1145 -.1145 -.1145 -.1145 -.1145 -.1145 -.1145 -.1145  
90.000 .3055 .1251 .0482 .0055 -.1245 -.1245 -.1245 -.1245 -.1245 -.1245 -.1245 -.1245 -.1245  
120.000 .3105 .1719 .0784 .1086 -.0214 -.0214 -.0214 -.0214 -.0214 -.0214 -.0214 -.0214 -.0214  
140.000 .2811 .1892 .1125 .1492 .3267 .3267 .3267 .3267 .3267 .3267 .3267 .3267 .3267  
150.000 .151.000 .1125 .1492 .3267 .3267 .3267 .3267 .3267 .3267 .3267 .3267 .3267 .3267  
162.000 .162.000 .1125 .1492 .3267 .3267 .3267 .3267 .3267 .3267 .3267 .3267 .3267 .3267  
165.000 .165.000 .1125 .1492 .3267 .3267 .3267 .3267 .3267 .3267 .3267 .3267 .3267 .3267  
169.000 .174.000 .1125 .1492 .3267 .3267 .3267 .3267 .3267 .3267 .3267 .3267 .3267 .3267  
174.000 .174.000 .1125 .1492 .3267 .3267 .3267 .3267 .3267 .3267 .3267 .3267 .3267 .3267  
180.000 .174.000 .1125 .1492 .3267 .3267 .3267 .3267 .3267 .3267 .3267 .3267 .3267 .3267-.0572  
-.0416

-1.2179 -.2761 -.1436 -.0618 -.0366

.4079

.3787 -1.4189 -.2599 -.1303 -.0649 -.0399

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .0259 -.0031 -.0454 -.1157 -.0952 -.1013 -.0076 .2793 .0241  
40.000 .0275 -.0235 -.0765 -.0715 -.0715 -.0827 -.0454 .1849 -.0332  
70.000 .2758 -.2049 -.1504 -.0194 -.2034 -.1961 -.1880  
90.000 .1938 -.1796 -.0671 .0006 -.2615 -.2335 -.2146  
105.000 .0087 .0234 -.3458 -.2799 -.2744  
110.000 .0982 .0243 -.3971 -.3175 -.2806  
120.000 .1599 .2791 -.3549 -.2690 -.2699  
135.000 .1658 .3733 -.3102 -.2805 -.2663  
150.000 -.0439 .0136 .1658 .1685  
165.000 -.0297 .1571 .1685  
180.000 -.0363 .0367 .1713 .3929

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## TABULATED PRESSURE DATA - 0A148 ( ANES 11-073-1 )

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ALPHA ( 3 ) = 4.015 BETA ( 4 ) = 4.243 MACH = .59602 Q = 593.50 P = 2386.4 RN/L = 4.8147  
 ANES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (XE8832)

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770   | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|---------|--------|--------|--------|--------|-------|-------|
| PHI     |        |       |       |       |        |        |       |        |         |        |        |        |        |       |       |
| 20.000  | 1.0548 | .5120 | .1030 | .0313 | -.0389 |        |       | -.0711 | -.0858  | -.0520 | -.0215 | .0044  | .0401  | .0409 |       |
| 40.000  |        |       | .1021 | .0107 | -.0589 | -.0802 |       | -.0820 | -.0853  |        |        |        |        |       |       |
| 55.000  |        |       | .1554 | .0123 | -.0482 | -.0601 |       | -.0930 | -.1104  | -.0832 | -.0248 | -.0013 | .0146  | .0698 |       |
| 70.000  |        |       | .1664 | .0187 | -.0332 | -.0856 |       | -.1493 | -.1893  |        |        |        |        |       |       |
| 90.000  |        | .2519 | .1652 | .0142 | -.0487 | -.0718 |       | -.1705 | -.2553  | -.2643 | -.1385 | -.0807 | -.0508 |       |       |
| 120.000 |        |       | .1845 | .0242 | -.0446 | -.0740 |       | -.1965 | -.3628  | -.2644 | -.1484 | -.0707 | -.0489 |       |       |
| 140.000 |        |       | .2124 | .0823 | -.0043 | .0293  |       | -.1272 | -.4472  | -.3431 | -.2517 | -.0672 | -.0458 |       |       |
| 150.000 |        |       | .2228 | .1473 | .0681  | .1036  |       | .2271  | -.5251  | -.3264 | -.1418 | -.0674 | -.0398 |       |       |
| 162.000 |        |       |       |       |        |        |       | -.1801 | -.6881  |        |        |        |        |       |       |
| 165.000 |        |       |       |       |        |        |       | -.1538 |         |        |        |        |        |       |       |
| 169.000 |        |       |       |       |        |        |       |        | -1.2083 | -.2708 | -.1392 | -.0722 | -.0443 |       |       |
| 174.000 |        |       |       |       |        |        |       |        |         |        |        |        |        |       |       |
| 180.000 | 1.0548 | .4129 | .2469 | .1694 | .1132  | .1654  | .5116 | .3496  | -1.4277 | -.2684 | -.1454 | -.0740 | -.0535 |       |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790  | .9210  | .9600 | .9990  | 1.0180  | 1.0460 |        |        |        |       |       |

## PHI

|         |        |        |        |        |        |        |        |        |       |        |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--|--|--|--|--|
| 40.000  | .0307  | .0005  | -.0478 | -.1118 | -.0968 | -.1068 | -.0070 |        | .2849 | .0272  |  |  |  |  |  |
| 70.000  | .0342  |        | -.0210 | -.0739 | -.0750 | -.0850 | -.0384 |        | .1775 | -.0381 |  |  |  |  |  |
| 90.000  | -.2815 | -.2877 | -.1811 | -.0758 | -.2480 | -.2335 | -.2177 |        |       |        |  |  |  |  |  |
| 105.000 | -.2020 | -.2072 | -.1108 | -.0739 | -.3147 | -.2725 | -.2413 |        |       |        |  |  |  |  |  |
| 110.000 |        |        | -.0607 | -.0557 | -.4279 | -.3310 | -.3045 |        |       |        |  |  |  |  |  |
| 120.000 | -.1130 | -.1018 | -.0011 | .0202  | -.5158 | -.4047 | -.3432 | -.3588 |       |        |  |  |  |  |  |
| 135.000 |        |        | .1049  | .2529  | -.4646 | -.3403 | -.3220 | -.2826 |       |        |  |  |  |  |  |
| 150.000 | -.0509 | -.0051 | .1335  | .2515  | -.4238 | -.3760 | -.3248 |        |       |        |  |  |  |  |  |
| 165.000 | -.0436 |        | .1472  |        | -.2821 | -.3724 | -.2741 |        |       |        |  |  |  |  |  |
| 180.000 | -.0555 | .0225  | .1640  | .2996  |        |        |        |        |       |        |  |  |  |  |  |

ALPHA ( 3 ) = 4.018 BETA ( 5 ) = 8.295 MACH = .59602 Q = 593.50 P = 2386.4 RN/L = 4.8147

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460  | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|-------|-------|-------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|-------|-------|
| PHI     |       |       |       |        |        |        |       |        |        |        |        |        |        |       |       |
| 20.000  | .9999 | .4831 | .0922 | .0097  | -.0598 |        |       | -.0874 | -.0882 | -.0716 | -.0403 | -.0055 | .0274  | .0260 |       |
| 40.000  |       |       | .0579 | -.0157 | -.0870 | -.1093 |       | -.1071 | -.1119 |        |        |        |        |       |       |
| 55.000  |       |       | .0593 | -.0477 | -.0958 | -.1118 |       | -.1308 | -.1576 | -.1337 | -.0723 | -.0287 | -.0114 | .0554 |       |
| 70.000  |       |       | .0489 | -.0764 | -.1126 | -.1407 |       | -.2005 | -.2377 |        |        |        |        |       |       |
| 90.000  |       | .0654 | .0457 | -.0823 | -.1351 | -.1327 |       | -.2935 | -.2935 | -.2804 | -.1485 | -.0808 | -.0500 |       |       |
| 120.000 |       |       | .0170 | -.0151 | -.1325 | -.1393 |       | -.4140 | -.4140 | -.2973 | -.1521 | -.0701 | -.0425 |       |       |
|         |       |       | .1020 | -.0159 | -.0989 | -.0611 |       | -.5030 | -.5030 | -.3620 | -.2461 | -.0630 | -.0405 |       |       |



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 :

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB832)

ALPHA ( 4 ) = 8.080 BETA ( 1 ) = -7.877

## SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | 0.000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770   | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|-------|-------|
| PHI     |        |        |        |        |        |        |        |        |         |        |        |        |        |       |       |
| 180.000 | .9919  | .2656  | .0729  | .0410  | .0015  | .0620  |        | .1702  | -1.7668 | -.3130 | -.1849 | -.1177 | -.1051 |       |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180  | 1.0460 |        |        |        |       |       |
| PHI     |        |        |        |        |        |        |        |        |         |        |        |        |        |       |       |
| 0.000   | .0890  | .0573  | .0021  | -.0630 | -.0864 | -.0828 | .0012  |        | .3100   | .0338  |        |        |        |       |       |
| 40.000  | .1107  | .0379  | -.0218 | -.0388 | -.0578 | -.0318 |        | .2272  | .0236   |        |        |        |        |       |       |
| 70.000  | -.3507 | -.2682 | -.1110 | .0923  | -.0906 | -.0974 | -.1166 |        |         |        |        |        |        |       |       |
| 90.000  | -.2754 | -.2071 | -.0415 | .1544  | -.1016 | -.1305 | -.1616 |        |         |        |        |        |        |       |       |
| 105.000 |        | .0058  | .3321  | -.1679 | -.1712 | -.2124 |        |        |         |        |        |        |        |       |       |
| 110.000 |        |        |        |        |        |        |        | -.2985 |         |        |        |        |        |       |       |
| 120.000 | -.3550 | -.1936 | .0415  | .4976  | -.2755 | -.2093 | -.1976 | -.2425 |         |        |        |        |        |       |       |
| 135.000 |        |        | .1240  | -.2402 | -.2929 | -.2069 | -.2447 |        |         |        |        |        |        |       |       |
| 150.000 | -.1614 | -.0641 | .1486  | -.1324 | -.3217 | -.1885 | -.2223 |        |         |        |        |        |        |       |       |
| 165.000 | -.1306 |        | .1181  |        | .0432  | -.1166 | -.2578 |        |         |        |        |        |        |       |       |
| 180.000 | -.1246 | -.0351 | .1005  | .1222  |        |        |        |        |         |        |        |        |        |       |       |

ALPHA ( 4 ) = 8.089 BETA ( 2 ) = -3.848 MACH = .59635 Q = 594.21 P = 2386.7 RN/L = 4.8181

## SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | 0.000  | .0080 | .0230 | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |        |        |        |        |        |        |         |        |        |        |        |       |
| 0.000   | 1.0210 | .6881 | .2713 | .1457  | .0773  |        |        | -.0053 |        | -.0069  | .0001  | .0234  | .0573  | .0978  | .1068 |
| 20.000  |        |       | .3149 | .1718  | .0815  | .0152  |        | -.0018 |        | -.0142  |        |        |        |        |       |
| 40.000  |        |       | .4284 | .2216  | .1334  | .0762  |        | .0207  |        | -.0109  | .0125  | .0587  | .0767  | .0888  | .1431 |
| 55.000  |        |       | .4422 | .2657  | .1749  | .0782  |        | -.0117 |        | -.0871  |        |        |        |        |       |
| 70.000  |        |       | .4059 | .2375  | .1394  | .0845  |        | -.0345 |        | -.1483  | -.2158 | -.1246 | -.0852 | -.0816 |       |
| 90.000  |        | .5053 | .3740 | .2116  | .1315  | .0816  |        | -.0385 |        | -.2264  | -.2362 | -.1506 | -.0987 | -.0905 |       |
| 120.000 |        |       | .2684 | .1567  | .0737  | .1075  |        | .0437  |        | -.3295  | -.3593 | -.3661 | -.2301 | -.2259 |       |
| 140.000 |        |       |       |        |        |        |        |        |        | -.4629  |        |        |        |        |       |
| 150.000 |        |       | .1801 | .0979  | .0346  | .0999  |        | .3781  |        | -.7016  | -.4812 | -.2047 | -.1158 | -.1038 |       |
| 151.000 |        |       |       |        |        |        |        |        | -.0341 |         |        |        |        |        |       |
| 162.000 |        |       |       |        |        |        |        |        | -.0304 |         |        |        |        |        |       |
| 165.000 |        |       |       |        |        |        |        |        |        | -.14054 | -.3387 | -.1760 | -.0980 | -.0843 |       |
| 169.000 |        |       |       |        |        |        |        |        |        |         |        |        |        |        |       |
| 174.000 |        |       |       |        |        |        |        |        |        |         |        |        |        |        |       |
| 180.000 | 1.0210 | .2767 | .1039 | .0597  | .0292  | .0916  | .5374  | .2656  |        | -.16114 | -.2855 | -.1494 | -.0776 | -.0677 |       |
| X/LB    | .6520  | .7290 | .7790 | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460  |        |        |        |        |       |
| PHI     |        |       |       |        |        |        |        |        |        |         |        |        |        |        |       |
| 0.000   | .1021  | .0649 | .0122 | -.0593 | -.0568 | -.0770 | .0106  |        | .3101  | .0387   |        |        |        |        |       |
| 40.000  | .1199  |       | .0426 | -.0173 | -.0413 | -.0511 | -.0215 |        | .2243  | -.0074  |        |        |        |        |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8832)

ALPHA ( 4 ) = 8.089 BETA ( 2 ) = -3.848

| SECTION ( 1 ) ORBITER FUSELAGE |  | DEPENDENT VARIABLE CP |        |        |       |        |        |        |
|--------------------------------|--|-----------------------|--------|--------|-------|--------|--------|--------|
| X/LB                           |  | .6520                 | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  |
| PHI                            |  |                       |        |        |       |        |        |        |
| 70.000                         |  | -.3782                | -.3100 | -.1667 | .0314 | -.1450 | -.1409 | -.1416 |
| 90.000                         |  | -.2936                | -.2316 | -.0843 | .0711 | -.1731 | -.1822 | -.1837 |
| 105.000                        |  |                       |        | -.0105 | .1716 | -.2483 | -.2221 | -.2351 |
| 110.000                        |  |                       |        |        |       |        |        | -.2992 |
| 120.000                        |  | -.2678                | -.1147 | .1444  | .1390 | -.3239 | -.2494 | -.2180 |
| 135.000                        |  |                       |        | .1657  | .1664 | -.3071 | -.2316 | -.2386 |
| 150.000                        |  | -.1133                | -.0201 | .1509  | .1808 | -.2787 | -.2230 | -.2225 |
| 165.000                        |  | -.0926                |        | .1188  |       | -.0824 | -.1890 | -.2382 |
| 180.000                        |  | -.0904                | -.0082 | .1223  | .3030 |        |        |        |

ALPHA ( 4 ) = 8.087 BETA ( 3 ) = .188 MACH = .59636 Q = 594.21 P = 2386.7 RV/L = 4.8181

| SECTION ( 1 ) ORBITER FUSELAGE |  | DEPENDENT VARIABLE CP |        |        |        |        |        |          |
|--------------------------------|--|-----------------------|--------|--------|--------|--------|--------|----------|
| X/LB                           |  | .0000                 | .0080  | .0230  | .0450  | .0700  | .1120  | .1580    |
| PHI                            |  |                       |        |        |        |        |        |          |
| .000                           |  | 1.0325                | .6877  | .2726  | .1555  | .0767  |        | -.0039   |
| 20.000                         |  |                       |        | .2849  | .1557  | .0613  | .0099  | -.0101   |
| 40.000                         |  |                       |        | .3414  | .1723  | .0877  | .0407  | -.0120   |
| 55.000                         |  |                       |        | .3205  | .1573  | .0715  | -.0029 | -.0826   |
| 70.000                         |  |                       |        | .2830  | .1249  | .0381  | .0091  | -.1049   |
| 90.000                         |  | .3599                 |        | .2657  | .1130  | .0448  | .0106  | -.1131   |
| 120.000                        |  |                       |        | .2244  | .0971  | .0241  | .0705  | -.0281   |
| 140.000                        |  |                       |        | .1686  | .0929  | .0301  | .0871  | .2342    |
| 150.000                        |  |                       |        |        |        |        |        | -.0987   |
| 160.000                        |  |                       |        |        |        |        | -.1105 |          |
| 174.000                        |  |                       |        |        |        |        |        | -.1.3351 |
| 180.000                        |  | 1.0325                | .2765  | .1264  | .0801  | .0424  | .1077  | -.3013   |
| PHI                            |  |                       |        |        |        |        |        | -.0602   |
| .6520                          |  | .7290                 | .7790  | .8210  | .8790  | .9210  | .9600  | -.1.5334 |
| PHI                            |  |                       |        |        |        |        |        | -.1397   |
| .000                           |  | .1016                 | .0611  | .0107  | -.0590 | -.0572 | -.0763 | -.0675   |
| 40.000                         |  | .1125                 | .0391  | -.0195 | -.0195 | -.0381 | -.0538 | -.0552   |
| 70.000                         |  | -.3986                | -.3327 | -.1914 | -.0283 | -.2076 | -.1984 | -.0371   |
| 90.000                         |  | -.2951                | -.2466 | -.0968 | -.0014 | -.2671 | -.2448 | .2101    |
| 105.000                        |  |                       |        | -.0092 | .0449  | -.3341 | -.2750 | -.0199   |
| 110.000                        |  |                       |        |        |        |        |        |          |
| 120.000                        |  | -.1851                | -.0956 | .0597  | .0566  | -.3863 | -.3127 | -.3176   |
| 135.000                        |  |                       |        | .0917  | .2494  | -.3679 | -.2755 | -.2429   |
| 150.000                        |  | -.0874                | -.0329 | .1287  | .4067  | -.3454 | -.2926 | -.2611   |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XE8832)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 8.087 BETA ( 3 ) = .188

## SECTION ( 1 ) ORBITTER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|--------|-------|-------|-------|--------|--------|--------|-------|--------|--------|
| PHI     |        |       |       |       |        |        |        |       |        |        |
| 165.000 | -.0725 | .1254 |       |       | -.1942 | -.3032 | -.2523 |       |        |        |
| 180.000 | -.3706 | .0050 | .1437 | .4105 |        |        |        |       |        |        |

ALPHA ( 4 ) = 8.086 BETA ( 4 ) = 4.243 MACH = .59636 Q = 594.21 P = 2386.7 RN/L = 4.8181

## SECTION ( 1 ) ORBITTER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770  | .2040    | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|--------|----------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |        |        |       |        |        |          |        |        |        |        |       |
| .000    | 1.0150 | .6696 | .2572 | .1419 | .0603  |        |       | -.0049 | -.0176 | -.0052   | .0235  | .0501  | .0877  | .0984  |       |
| 20.000  |        |       | .2389 | .1210 | .0338  | -.0076 |       | -.0274 | -.0401 |          |        |        |        |        |       |
| 40.000  |        |       | .2368 | .0965 | .0250  | -.0164 |       | -.0558 | -.0963 | -.0816   | -.0301 | .0167  | .0461  | .1173  |       |
| 55.000  |        |       | .1930 | .0438 | -.0155 | -.0807 |       | -.1494 | -.2135 |          |        |        |        |        |       |
| 70.000  |        |       | .1646 | .0248 | -.0589 | -.0584 |       | -.1584 | -.2589 | -.2803   | -.1794 | -.1217 | -.1087 |        |       |
| 90.000  | .1944  |       | .1601 | .0196 | -.0429 | -.0584 |       | -.1748 | -.3557 | -.2985   | -.1804 | -.1136 | -.0991 |        |       |
| 120.000 |        |       | .1512 | .0333 | -.0344 | .0181  |       | -.1127 | -.4621 | -.3658   | -.2767 | -.1049 | -.0893 |        |       |
| 140.000 |        |       |       |       |        |        |       |        | -.5743 |          |        |        |        |        |       |
| 150.000 |        |       | .1257 | .0703 | -.0015 | .0582  |       | .1985  | -.7469 | -.3550   | -.1591 | -.0666 | -.0621 |        |       |
| 151.000 |        |       |       |       |        |        |       |        | -.2044 |          |        |        |        |        |       |
| 162.000 |        |       |       |       |        |        |       |        | -.2053 |          |        |        |        |        |       |
| 165.000 |        |       |       |       |        |        |       |        |        | -.1.2911 | -.2894 | -.1546 | -.0661 | -.0581 |       |
| 169.000 |        |       |       |       |        |        |       |        |        |          |        |        |        |        |       |
| 174.000 |        |       |       |       |        |        |       |        |        |          |        |        |        |        |       |
| 180.000 | 1.0150 | .2495 | .1252 | .0786 | .0300  | .0968  | .4599 | .2921  |        | -.1.5279 | -.2801 | -.1534 | -.0838 | -.0716 |       |

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

## PHI

| PHI     | .000   | .0936  | .0605  | .0060  | -.0590 | -.0568 | -.0779 | .0159        |
|---------|--------|--------|--------|--------|--------|--------|--------|--------------|
| .000    |        |        |        |        |        |        |        |              |
| 40.000  | .1036  | .0408  | -.0204 | -.0204 | -.0384 | -.0813 | -.0162 | .3143 .0442  |
| 70.000  | -.4026 | -.3595 | -.2288 | -.0963 | -.2630 | -.2477 | -.2161 | .1969 -.0279 |
| 90.000  | -.2913 | -.2592 | -.1402 | -.0967 | -.3232 | -.2837 | -.2472 |              |
| 105.000 |        |        | -.0836 | -.0735 | -.4396 | -.3306 | -.3034 |              |
| 110.000 |        |        |        |        |        |        |        | -.3667       |
| 120.000 | -.1632 | -.1459 | -.0397 | .0159  | -.1968 | -.3917 | -.3340 | -.2672       |
| 135.000 |        |        |        | .0842  | -.3445 | -.4672 | -.3444 |              |
| 150.000 | -.0764 | -.0347 | .1136  | .3401  | -.4619 | -.3846 | -.3089 |              |
| 165.000 | -.0761 | .1112  | .1112  | .1112  | -.3261 | -.3922 | -.2705 |              |
| 180.000 | -.0883 | -.0009 | .1355  | .2191  |        |        |        |              |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB832)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 8.082 BETA ( 5 ) = 8.301 MACH = .59636 Q = 594.21 P = 2386.7 RN/L = 4.8181

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | PHI   | .0000 | .0080  | .0230  | .0460  | .0700  | .1120 | .1580 | .1660  | .1770    | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|-------|--------|--------|--------|--------|-------|-------|--------|----------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | .9563 | .6261  | .2275  | .1123  | .0300  |       |       | -.0242 | -.0315   | -.0186 | .0029  | .0447  | .0764  | .0824  |       |
| 20.000  |       | .1755 | .0724  | .0110  | -.0406 |        |       |       | -.0546 | -.0755   | -.1661 | -.0927 | -.0288 | .0102  | .0954  |       |
| 40.000  |       | .1169 | .0525  | -.0929 |        |        |       |       | -.1184 | -.1715   | -.3054 | -.1972 | -.1386 | -.1345 |        |       |
| 55.000  |       | .0519 | -.0693 | -.1219 | -.1658 |        |       |       | -.2244 | -.2715   | -.3085 | -.1811 | -.1069 | -.1022 |        |       |
| 70.000  |       | .0275 | -.0873 | -.1413 | -.1222 |        |       |       | -.2173 | -.3040   | -.3670 | -.2435 | -.0759 | -.0591 |        |       |
| 90.000  | .0104 | .0381 | -.0880 | -.1271 | -.1241 |        |       |       | -.2329 | -.3979   | -.5110 | -.3369 | -.1579 | -.0811 | -.0781 |       |
| 120.000 |       | .0538 | -.0570 | -.1157 | -.0622 |        |       |       | -.2073 | -.6082   | -.7737 |        |        |        |        |       |
| 140.000 |       | .0470 | .0103  | -.0622 | -.0100 |        |       |       | .0737  | -.3468   |        |        |        |        |        |       |
| 150.000 |       |       |        |        |        |        |       |       | -.3373 |          |        |        |        |        |        |       |
| 162.000 |       |       |        |        |        |        |       |       |        | -.1.2897 | -.3040 | -.1688 | -.0974 | -.0965 |        |       |
| 165.000 |       |       |        |        |        |        |       |       |        |          |        |        |        |        |        |       |
| 169.000 |       |       |        |        |        |        |       |       |        |          |        |        |        |        |        |       |
| 174.000 |       |       |        |        |        |        |       |       |        |          |        |        |        |        |        |       |
| 180.000 |       | .9563 | .1778  | .0938  | .0352  | -.0129 | .0502 | .3892 | .1932  | -.1.5057 | -.3294 | -.1903 | -.1244 | -.1131 |        |       |

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | PHI  | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660 | .1770 | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--------|-------|-------|-------|-------|-------|
| PHI     | .000 | .0800  | .0531  | .0026  | -.0675 | -.0634 | -.0784 | .0047  |       | .3144 | .0454  |       |       |       |       |       |
| 20.000  |      | .0912  | .0254  | -.0313 | -.0507 | -.0506 | -.0202 |        |       | .1835 | -.0470 |       |       |       |       |       |
| 40.000  |      | -.3902 | -.3827 | -.2814 | -.1612 | -.3056 | -.2740 | -.2286 |       |       |        |       |       |       |       |       |
| 55.000  |      | -.2866 | -.2946 | -.2194 | -.1676 | -.3804 | -.3032 | -.2676 |       |       |        |       |       |       |       |       |
| 70.000  |      |        |        | -.1656 | -.0692 | -.5188 | -.3769 | -.3256 |       |       |        |       |       |       |       |       |
| 90.000  |      |        |        |        |        |        |        |        |       |       |        |       |       |       |       |       |
| 110.000 |      | -.1719 | -.1833 | -.1110 | .1410  | -.6250 | -.4821 | -.3929 |       |       |        |       |       |       |       |       |
| 120.000 |      |        |        | .0135  | .3102  | -.5776 | -.4304 | -.3711 |       |       |        |       |       |       |       |       |
| 135.000 |      |        |        | .0520  | .0743  | -.5757 | -.4848 | -.3736 |       |       |        |       |       |       |       |       |
| 150.000 |      | -.1050 | -.0757 | .0588  |        | -.4735 | -.4778 | -.2979 |       |       |        |       |       |       |       |       |
| 165.000 |      | -.1088 |        | .0859  | .1357  |        |        |        |       |       |        |       |       |       |       |       |
| 180.000 |      | -.1306 | -.0544 |        |        |        |        |        |       |       |        |       |       |       |       |       |

ALPHA ( 5 ) = 12.017 BETA ( 1 ) = -7.830 MACH = .59626 Q = 593.97 P = 2386.7 RN/L = 4.8175

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | PHI   | .0000 | .0080 | .0230  | .0460 | .0700 | .1120 | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|-------|-------|-------|--------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|-------|
| PHI     | .000  | .9209 | .7772 | .3713  | .2245 | .1515 |       |       | .0413  | .0395  | .0449  | .0628  | .0956  | .1437  | .1633 |       |
| 20.000  |       | .4602 | .2995 | .1813  | .0963 |       |       |       | .0688  | .0563  | .0950  | .1332  | .1534  | .1690  | .2254 |       |
| 40.000  |       | .5845 | .3755 | .2752  | .1898 |       |       |       | .1201  | .0868  |        |        |        |        |       |       |
| 55.000  |       | .5740 | .3826 | .2801  | .1790 |       |       |       | .0707  | -.0186 |        |        |        |        |       |       |
| 70.000  |       | .4829 | .3142 | .2078  | .1516 |       |       |       | -.0581 | -.0681 | -.1827 | -.1208 | -.0974 | -.0995 |       |       |
| 90.000  | .5403 | .3958 | .2491 | .1950  | .1180 |       |       |       | -.1764 | -.1369 | -.2230 | -.1643 | -.1369 | -.1494 |       |       |
| 120.000 |       | .2132 | .0631 | -.0054 | .0418 |       |       |       | -.3230 | -.4396 | -.5590 | -.4895 | -.5223 |        |       |       |



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB832)

ALPHA ( 5 ) = 12.037 BETA ( 2 ) = -3.825

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230  | .0460  | .0700  | .1120 | .1580 | .1660 | .1770  | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|-------|--------|--------|--------|-------|-------|-------|--------|---------|--------|--------|--------|--------|-------|
| PHI     |       |       |        |        |        |       |       |       |        |         |        |        |        |        |       |
| 180.000 | .9459 | .1079 | -.0182 | -.0393 | -.0497 | .0331 |       | .2083 |        | -1.8201 | -.2985 | -.1543 | -.0880 | -.0912 |       |
| X/LB    | .6520 | .7290 | .7790  | .8210  | .8790  | .9210 | .9600 | .9990 | 1.0180 | 1.0460  |        |        |        |        |       |

PHI

| PHI     | .000   | .1321  | .0700  | -.0059 | -.0136 | -.0478 | .0281  |  | .3299 | .0487 |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--|-------|-------|--|--|--|--|--|
| 40.000  | .2009  | .1101  | .0414  | .0027  | -.0247 | -.0045 |        |  | .2378 | .0036 |  |  |  |  |  |
| 70.000  | -.5286 | -.3995 | -.2197 | -.0157 | -.1641 | -.1452 | -.1328 |  |       |       |  |  |  |  |  |
| 90.000  | -.3918 | -.2834 | -.1211 | .0460  | -.1876 | -.1769 | -.1729 |  |       |       |  |  |  |  |  |
| 105.000 |        |        | -.0376 | .1249  | -.2514 | -.2229 | -.2354 |  |       |       |  |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        |  |       |       |  |  |  |  |  |
| 120.000 | -.3366 | -.1176 | .0495  | .1476  | -.3225 | -.2519 | -.2143 |  |       |       |  |  |  |  |  |
| 135.000 |        |        | .0627  | .1409  | -.3045 | -.2399 | -.2487 |  |       |       |  |  |  |  |  |
| 150.000 | -.2164 | -.1431 | -.0017 | .2915  | -.2729 | -.2612 | -.2481 |  |       |       |  |  |  |  |  |
| 165.000 | -.1531 |        | .0496  |        | -.0794 | -.1963 | -.2265 |  |       |       |  |  |  |  |  |
| 180.000 | -.1196 | -.0340 | .1054  | .4062  |        |        |        |  |       |       |  |  |  |  |  |

ALPHA ( 5 ) = 12.038 BETA ( 3 ) = .185 MACH = .59626 O = 593.97 P = 2386.7 RN/L = 4.8175

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230  | .0460  | .0700  | .1120  | .1580 | .1660  | .1770  | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|-------|--------|--------|--------|--------|-------|--------|--------|---------|--------|--------|--------|--------|-------|
| PHI     |       |       |        |        |        |        |       |        |        |         |        |        |        |        |       |
| 20.000  | .9557 | .8161 | .4112  | .2663  | .1778  |        |       | .0675  |        | .0606   | .0606  | .0803  | .1133  | .1573  | .1723 |
| 40.000  |       |       | .4192  | .2650  | .1622  | .0949  |       | .0606  |        | -.0169  | -.0214 | .0402  | .0806  | .1183  | .1341 |
| 55.000  |       |       | .4140  | .2569  | .1570  | .0958  |       | .0402  |        | -.1805  |        |        |        |        |       |
| 70.000  |       |       | .3187  | .1544  | .0700  | -.0273 |       | -.1086 |        | -.2212  | -.2920 | -.2055 | -.1685 | -.1707 |       |
| 90.000  | .2667 |       | .2500  | .0952  | .0123  | -.0050 |       | -.1107 |        | -.3093  | -.3047 | -.2128 | -.1714 | -.1630 |       |
| 120.000 |       |       | .2069  | .0653  | .0205  | -.0164 |       | -.1218 |        | -.4307  | -.4148 | -.4021 | -.2566 | -.2359 |       |
| 140.000 |       |       | .1252  | .0075  | -.0503 | .0121  |       | -.0524 |        | -.5757  |        |        |        |        |       |
| 150.000 |       |       | .0439  | .0021  | -.0560 | .0277  |       | .2668  |        | -.7997  | -.4469 | -.2010 | -.1056 | -.1143 |       |
| 151.000 |       |       |        |        |        |        |       |        |        |         |        |        |        |        |       |
| 162.000 |       |       |        |        |        |        |       |        |        |         |        |        |        |        |       |
| 165.000 |       |       |        |        |        |        |       |        |        |         |        |        |        |        |       |
| 169.000 |       |       |        |        |        |        |       |        |        |         |        |        |        |        |       |
| 174.000 |       |       |        |        |        |        |       |        |        |         |        |        |        |        |       |
| 180.000 |       |       |        |        |        |        |       |        |        |         |        |        |        |        |       |
| X/LB    | .9557 | .1008 | -.0028 | -.0050 | -.0335 | .0421  |       | .2933  |        | -1.4506 | -.3206 | -.1664 | -.0836 | -.0795 |       |
| PHI     |       |       |        |        |        |        |       |        |        |         |        |        |        |        |       |
| 40.000  | .1645 | .1302 | .0636  | -.0059 | -.0166 | -.0447 | .0316 |        |        |         |        |        |        |        |       |
| 1908    | .1908 |       | .1044  | .0364  | -.0028 | -.0270 | .0016 |        |        |         |        |        |        |        |       |
| X/LB    | .6520 | .7290 | .7790  | .8210  | .8790  | .9210  | .9600 | .9990  | 1.0180 | 1.0460  |        |        |        |        |       |

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ABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XE8832)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 5 ) = 12.038 BETA ( 3 ) = .185

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| 70.000  | -.5514 | -.4385 | -.2615 | -.0761 | -.2340 | -.2101 | -.1783 |        |        |        |
| 90.000  | -.4051 | -.3213 | -.1532 | -.0462 | -.2865 | -.2437 | -.2072 |        |        |        |
| 105.000 |        |        | -.0529 | .0156  | -.3669 | -.2837 | -.2636 |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.3122 |        |        |
| 120.000 | -.2322 | -.1515 | .0087  | .0930  | -.3921 | -.3141 | -.2654 | -.2368 |        |        |
| 135.000 |        |        | .0024  | .2327  | -.3938 | -.2986 | -.2678 |        |        |        |
| 150.000 | -.1647 | -.0941 | .0905  | .4776  | -.3626 | -.3026 | -.2676 |        |        |        |
| 165.000 | -.1112 |        | .1148  | -.2072 | -.3103 | -.2124 |        |        |        |        |
| 180.000 | -.1026 | -.0150 | .1342  | .4280  |        |        |        |        |        |        |

ALPHA ( 5 ) = 12.033 BETA ( 4 ) = 4.256 MACH = .59626 Q = 593.97 P = 2386.7 RN/L = 4.8175

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460  | .0700  | .1120  | .1580 | .1660  | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|-------|-------|--------|--------|--------|-------|--------|-------|--------|--------|--------|--------|--------|-------|
| PHI     |       |       |       |        |        |        |       |        |       |        |        |        |        |        |       |
| 0.000   |       |       |       |        |        |        |       | .0592  |       | .0484  | .0522  | .0662  | .1057  | .1478  | .1682 |
| 20.000  | .9417 | .7967 | .3919 | .2521  | .1598  |        |       | .0279  |       | .0074  |        |        |        |        |       |
| 40.000  |       |       | .3579 | .2267  | .1241  | .0615  |       | -.0378 |       | -.0934 | -.1065 | -.0305 | .0257  | .0782  | .1715 |
| 55.000  |       |       | .2990 | .1588  | .0719  | .0138  |       | -.1974 |       | -.2465 |        |        |        |        |       |
| 70.000  |       |       | .1796 | .0309  | -.0454 | -.1203 |       | -.2727 |       | -.2727 | -.3217 | -.2324 | -.1903 | -.2052 |       |
| 90.000  |       | .1118 | .1261 | -.0115 | -.0797 | -.1770 |       | -.3540 |       | -.3214 | -.3214 | -.2180 | -.1661 | -.1636 |       |
| 100.000 |       |       | .1029 | -.0252 | -.0579 | -.0724 |       | -.4736 |       | -.3590 | -.3590 | -.3293 | -.1668 | -.1460 |       |
| 120.000 |       |       | .0708 | -.0342 | -.0961 | -.0243 |       | -.6116 |       | -.8121 | -.3897 | -.1633 | -.0804 | -.0820 |       |
| 140.000 |       |       | .0196 | -.0153 | -.0731 | .0028  |       | -.2382 |       |        |        |        |        |        |       |
| 150.000 |       |       |       |        |        |        |       | -.2590 |       |        |        |        |        |        |       |
| 160.000 |       |       |       |        |        |        |       |        |       |        |        |        |        |        |       |
| 174.000 |       |       |       |        |        |        |       |        |       |        |        |        |        |        |       |
| 180.000 |       |       |       |        |        |        |       |        |       |        |        |        |        |        |       |

PHI

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 70.000  | .1684  | .1289  | .0701  | -.0087 | -.0167 | -.0452 | .0299  |        |        |        |
| 90.000  | .1725  |        | .0957  | .0339  | -.0158 | -.0393 | -.0008 |        |        |        |
| 105.000 | -.5431 | -.4589 | -.2988 | -.1483 | -.2915 | -.2648 | -.2196 |        |        |        |
| 120.000 | -.4031 | -.3481 | -.2068 | -.1530 | -.3674 | -.2808 | -.2367 |        |        |        |
| 135.000 |        |        | -.1384 | -.1210 | -.4813 | -.3517 | -.3132 |        |        |        |
| 150.000 |        |        |        |        |        |        |        | -.3678 |        |        |
| 160.000 |        |        |        |        |        |        |        | -.2626 |        |        |
| 174.000 | -.2228 | -.2065 | -.1179 | -.0605 | -.5228 | -.4036 | -.3325 |        |        |        |
| 180.000 |        |        | .0440  | .3415  | -.4643 | -.3451 | -.3182 |        |        |        |
|         | -.1187 | -.0671 | .0972  | .4029  | -.4836 | -.3949 | -.3256 |        |        |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-373-1 )

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ALPHA ( 5 ) = 12.033 BETA ( 4 ) = 4.256

AMES 11-07310A148) -140A/B/C/R ORB FUSELAGE

(XE8832)

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .6520   | .7290   | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |
|---------|---------|---------|-------|-------|-------|-------|-------|-------|--------|--------|
| PHI     |         |         |       |       |       |       |       |       |        |        |
| 165.000 | -1.1019 |         | .0844 |       |       |       |       |       |        |        |
| 180.000 | -1.1281 | -0.0442 | .0912 | .3829 |       |       |       |       |        |        |

ALPHA ( 5 ) = 12.024 BETA ( 5 ) = 8.318 MACH = .59626 Q = 593.97 P = 2388.7 RN/L = 4.8175

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230  | .0460  | .0700  | .1120  | .1580 | .1660  | .1770  | .2040    | .2510  | .3010  | .3780  | .4870  | .5740 |
|---------|-------|--------|--------|--------|--------|--------|-------|--------|--------|----------|--------|--------|--------|--------|-------|
| PHI     |       |        |        |        |        |        |       |        |        |          |        |        |        |        |       |
| .000    | .8808 | .7541  | .3692  | .2288  | .1306  |        |       | .0410  | .0312  | .0383    | .0616  | .0955  | .1405  | .1519  |       |
| 20.000  |       |        | .2927  | .1619  | .0799  | .0266  |       | -.0112 | -.0320 |          |        |        |        |        |       |
| 40.000  |       |        | .1656  | .0498  | -.0173 | -.0830 |       | -.1188 | -.1933 | -.2135   | -.1178 | -.0298 | .0406  | .1377  |       |
| 55.000  |       |        | .0258  | -.1031 | -.1583 | -.2354 |       | -.2710 | -.3248 |          |        |        |        |        |       |
| 70.000  |       |        | -.0068 | -.1114 | -.1654 | -.1470 |       | -.2224 | -.3223 | -.3471   | -.2502 | -.2187 | -.2343 |        |       |
| 90.000  |       | -.0645 | .0011  | -.1105 | -.1327 | -.1290 |       | -.2300 | -.4078 | -.3316   | -.2232 | -.1690 | -.1619 |        |       |
| 120.000 |       |        | -.0143 | -.1000 | -.1458 | -.0709 |       | -.1845 | -.5150 | -.3764   | -.2753 | -.1084 | -.1118 |        |       |
| 140.000 |       |        |        |        |        |        |       |        | -.6486 |          |        |        |        |        |       |
| 150.000 |       |        | -.0333 | -.0619 | -.1076 | -.0439 |       | .0568  | -.8206 | -.3422   | -.1595 | -.0731 | -.0826 |        |       |
| 151.000 |       |        |        |        |        |        |       |        | -.3549 |          |        |        |        |        |       |
| 162.000 |       |        |        |        |        |        |       |        | -.3812 |          |        |        |        |        |       |
| 165.000 |       |        |        |        |        |        |       |        |        | -.1.3751 | -.3040 | -.1668 | -.0925 | -.1110 |       |
| 169.000 |       |        |        |        |        |        |       |        |        |          |        |        |        |        |       |
| 174.000 |       |        |        |        |        |        |       |        |        |          |        |        |        |        |       |
| 180.000 | .8808 | .0096  | -.0270 | -.0593 | -.0872 | -.0038 | .3373 | .1448  |        | -.1.7706 | -.3248 | -.1941 | -.1320 | -.1427 |       |

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| .000    | .1505  | .1244  | .0629  | -.0118 | -.0170 | -.0452 | .0342  |        | .3352  | .0615  |
| 40.000  | .1529  |        | .0870  | .0281  | -.0121 | -.0393 | -.0019 |        | .1950  | -.0296 |
| 70.000  | -.5326 | -.4727 | -.3348 | -.2259 | -.3412 | -.3035 | -.2392 |        |        |        |
| 90.000  | -.3973 | -.3817 | -.2919 | -.2349 | -.4036 | -.3056 | -.2422 |        |        |        |
| 105.000 |        |        | -.2259 | -.2087 | -.5925 | -.4083 | -.3399 |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.3537 |        |        |
| 120.000 | -.2528 | -.2789 | -.1768 | .0074  | -.6588 | -.4906 | -.4126 |        |        |        |
| 135.000 |        |        | .0051  | .4803  | -.6121 | -.4472 | -.3812 |        |        |        |
| 150.000 | -.1347 | -.0925 | .0152  | .3613  | -.6126 | -.5187 | -.4083 |        |        |        |
| 165.000 | -.1647 |        | -.0143 |        | -.5615 | -.5193 | -.3091 |        |        |        |
| 180.000 | -.2047 | -.1345 | .0253  | .1305  |        |        |        |        |        |        |

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 TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB833) ( 05 AUG 75 )

PARAMETRIC DATA

RUDDER = 10.000 SPDRK = 35.000  
 BDFLAP = 16.300 L-ELVN = .000  
 R-ELVN = 10.000 MACH = 1.400

REFERENCE DATA

SREF = 21.90.0000 SQ.FT. XMRP = 1076.6900 IN. X0  
 LREF = 474.8000 IN. YMRP = .0000 IN. Y0  
 BREF = 936.0180 IN. ZMRP = 375.0000 IN. Z0  
 SCALE = .0300

ALPHA ( 1 ) = -4.110 BETA ( 1 ) = -3.848 MACH = 1.3852 Q = 599.12 P = 439.71 RN/L = 2.9043

DEPENDENT VARIABLE CP

SECTION ( 1 ) ORBITER FUSELAGE

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI .000 1.4786 .6738 .2038 .0773 .0076 .0000 .0518  
 20.000 .2596 .0928 .0156 -.0746 -.0531  
 40.000 .4445 .1250 .0657 -.0530 -.0977  
 60.000 .5963 .3142 .2353 .1070 .1191  
 80.000 .6892 .4138 .3170 .2232 .2313  
 100.000 .7554 .4920 .3420 .2712 .2934  
 120.000 .8159 .6155 .4497 .4769 .5699  
 140.000 .8017 .6496 .4980 .5631 1.0025  
 160.000 .7454  
 180.000 .6079  
 1.4786 1.0318 .7353 .6092 .4797 .5631 1.0542  
 .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460  
 1.4786 1.0318 .7353 .6092 .4797 .5631 1.0542  
 .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI .000 .0191 -.0226 -.0406 -.0925 -.1612 -.2072 -.2574  
 40.000 .0175 -.0175 -.0788 -.1032 -.1737 -.1588 -.3070  
 60.000 .0415 .0212 -.0453 .1934 .1511 .0627 .0637  
 80.000 .0920 .0528 .0638 .2037 .1252 .0556 .0096  
 100.000 .2031 .2392 .0305 -.0164 -.0461  
 120.000 .0397 .0634 .3568 .2894 .0748 -.0484 -.0269  
 140.000 .4019 .4249 .4174 .4174 .4174 .4174 .4174  
 160.000 .0075 .0417 .3845 .4174 .4174 .4174 .4174  
 180.000 .0157 .0203 .3803 .4174 .4174 .4174 .4174

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8833)

ALPHA ( 1 ) = -4.105 BETA ( 2 ) = .195 MACH = 1.3952 Q = 599.12 P = 439.71 RN/L = 2.9043

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700  | .1120 | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|-------|-------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000   | .6714  | .2111 | .0820 | .0155  |       |        | -.0549 | -.0266 | -.0018 | -.0110 | -.0425 | -.0518 | -.0537 |       |
| 20.000  |        | .2468  | .0925 | .0080 | -.0476 |       |        | -.0483 | -.0427 |        |        |        |        |        |       |
| 40.000  |        | .3881  | .1133 | .0538 | -.0518 |       |        | -.0554 | -.1167 | -.1235 | -.1092 | -.0659 | -.0804 | -.0449 |       |
| 55.000  |        | .5067  | .2364 | .1696 | .0423  |       |        | .0712  | .0302  |        |        |        |        |        |       |
| 70.000  |        | .5816  | .3099 | .2260 | .1316  |       |        | .1573  | .0723  | -.2456 | -.1648 | -.1083 | .0057  |        |       |
| 90.000  | .8013  | .6466  | .3834 | .2362 | .1640  |       |        | .2057  | -.0114 | -.2389 | -.2423 | -.1293 | -.0001 |        |       |
| 120.000 |        | .7243  | .5266 | .3635 | .3847  |       |        | .4624  | .0463  | -.1841 | -.4049 | -.1775 | -.0491 |        |       |
| 140.000 |        |        |       |       |        |       |        |        | -.0710 | -.2978 | -.1811 | -.1392 | -.0716 |        |       |
| 150.000 |        | .7543  | .6152 | .4554 | .5203  |       |        | .9328  | -.1675 |        |        |        |        |        |       |
| 151.000 |        |        |       |       |        |       |        | .8591  |        |        |        |        |        |        |       |
| 162.000 |        |        |       |       |        |       |        | .7443  |        |        |        |        |        |        |       |
| 165.000 |        |        |       |       |        |       |        |        | -.1510 | -.2747 | -.1421 | -.1229 | -.0745 |        |       |
| 169.000 |        |        |       |       |        |       |        |        | -.2891 | -.2938 | -.1052 | -.1168 | -.0761 |        |       |
| 174.000 |        |        |       |       |        |       |        |        |        |        |        |        |        |        |       |
| 180.000 | 1.4763 | 1.0161 | .7453 | .6142 | .4951  | .5637 | 1.0962 | 1.0395 |        |        |        |        |        |        |       |
| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790  | .9210 | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |

## PHI

| X/LB    | .000 | .0170  | -.0158 | -.0388 | -.0880 | -.1616 | -.2054 | -.2574 |
|---------|------|--------|--------|--------|--------|--------|--------|--------|
| 40.000  |      | -.0444 | -.0605 | -.0929 | -.1635 | -.1562 | -.2834 | .1914  |
| 70.000  |      | .0584  | .0119  | .0069  | .2344  | .1132  | .0212  | .2063  |
| 90.000  |      | .0702  | .0392  | .1545  | .1939  | .0703  | .0047  | .0566  |
| 105.000 |      |        | .2835  | .2259  | -.0123 | -.0477 | -.0744 |        |
| 110.000 |      | .0411  | .0608  | .3007  | .1397  | .0254  | -.1074 | -.1872 |
| 120.000 |      |        |        | .3912  | .3946  | .0808  | .0193  | -.1938 |
| 135.000 |      | .0078  | .0447  | .4020  | .4164  | .1716  | .1034  |        |
| 150.000 |      | .0021  | .4080  | .4207  | .1929  | .3064  |        |        |
| 165.000 |      | -.0038 | .0286  | .4116  | .4966  |        |        |        |
| 180.000 |      |        |        |        |        |        |        |        |

ALPHA ( 1 ) = -4.114 BETA ( 3 ) = 4.277 MACH = 1.3952 Q = 599.12 P = 439.71 RN/L = 2.9043

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700  | .1120 | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|-------|-------|-------|--------|-------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | .6541 | .2028 | .0684 | .0172  |       |       | -.0596 | -.0393 | -.0037 | -.0159 | -.0338 | -.0643 | -.0586 |       |
| 20.000  |       | .2144 | .0765 | .0038 | -.0428 |       |       | -.0341 | -.0341 |        |        |        |        |        |       |
| 40.000  |       | .3195 | .0867 | .0297 | -.0494 |       |       | -.0781 | -.0781 | -.0738 | -.0757 | -.0539 | -.0714 | -.0388 |       |
| 55.000  |       | .4131 | .1573 | .1020 | -.0077 |       |       | .0027  | .0027  |        |        |        |        |        |       |
| 70.000  |       | .4752 | .2121 | .1358 | .0584  |       |       | .0176  | .0176  | -.2865 | -.2248 | -.1357 | -.0088 |        |       |
| 90.000  | .6489 | .5348 | .2806 | .1365 | .0745  |       |       | -.1083 | -.1083 | -.3021 | -.2990 | -.1506 | -.0151 |        |       |
| 120.000 |       | .6257 | .4388 | .2678 | .2872  |       |       | -.0562 | -.0562 | -.2509 | -.4518 | -.2356 | -.0601 |        |       |





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## TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB833)

ALPHA ( 2 ) = -.046 BETA ( 2 ) = .181

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

## PHI

|         |        |        |        |       |        |        |        |
|---------|--------|--------|--------|-------|--------|--------|--------|
| 70.000  | -.0022 | -.0928 | -.1234 | .0753 | .0247  | -.0493 | -.0516 |
| 90.000  | .0274  | -.0404 | .0233  | .1014 | -.0206 | -.0503 | -.0938 |
| 105.000 |        |        | .1584  | .1274 | -.1200 | -.1166 | -.1411 |
| 110.000 |        |        |        |       |        |        | -.2429 |
| 120.000 | .0143  | .0084  | .2700  | .2021 | .0067  | -.1467 | -.2166 |
| 135.000 |        |        | .2840  | .3363 | .0798  | -.0325 | -.0748 |
| 150.000 | -.0024 | .0236  | .2991  | .3538 | .1145  | .0522  | -.0269 |
| 165.000 | -.0088 |        | .3161  |       | .3379  | .1308  | -.2968 |
| 180.000 | -.0109 | .0193  | .3268  | .4253 |        |        |        |

ALPHA ( 2 ) = -.050 BETA ( 3 ) = .4256 MACH = 1.3944 Q = 599.11 P = 440.18 RV/L = 2.9098

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

## PHI

|         |        |       |       |       |       |       |        |        |        |        |        |        |
|---------|--------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| 20.000  | 1.4696 | .7820 | .3245 | .1493 | .0937 |       | -.0161 | .0001  | .0203  | .0049  | -.0272 | -.0329 |
| 40.000  |        |       | .3214 | .1509 | .0676 | .0189 | -.0126 | -.0234 | -.0232 | -.0081 | -.0464 | -.0298 |
| 55.000  |        |       | .3931 | .1653 | .1033 | .0194 | -.0001 | .0621  |        |        |        |        |
| 70.000  |        |       | .4542 | .2117 | .1523 | .0418 | .0525  | .0711  | -.2570 | -.1894 | -.1511 | -.0443 |
| 90.000  |        | .6201 | .4878 | .2292 | .1577 | .0662 | .1059  | -.0331 | -.2702 | -.2742 | -.1681 | -.0492 |
| 120.000 |        |       | .5240 | .2746 | .1483 | .0759 | .1542  | -.0348 | -.2681 | -.4543 | -.1832 | -.0659 |
| 140.000 |        |       | .5702 | .3902 | .2280 | .2159 | .3623  | -.1966 | -.3534 | -.2415 | -.2005 | -.0842 |
| 150.000 |        |       | .5905 | .4888 | .3105 | .3056 | .8219  | .5326  |        |        |        |        |
| 151.000 |        |       |       |       |       |       |        | .6362  |        |        |        |        |
| 162.000 |        |       |       |       |       |       |        |        | -.2141 | -.3631 | -.1844 | -.0942 |
| 165.000 |        |       |       |       |       |       | .9466  |        |        |        |        |        |
| 169.000 |        |       |       |       |       |       |        |        |        |        |        |        |
| 174.000 |        |       |       |       |       |       |        |        |        |        |        |        |
| 180.000 | 1.4696 | .8620 | .6161 | .5208 | .3765 | .3692 | .9719  | -.3174 | -.3382 | -.2081 | -.1695 | -.1008 |

## X/LB

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

## PHI

|         |        |        |        |        |        |        |        |       |       |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| 40.000  | -.0175 | .0194  | .0100  | -.0350 | -.0987 | -.1431 | -.1914 | .2509 | .2409 |
| 70.000  | .0190  | .0246  | -.0183 | -.0183 | -.1011 | -.1018 | -.2013 | .1446 | .1066 |
| 90.000  | -.0087 | -.1182 | -.0320 | .0895  | .0000  | -.0861 | -.1035 |       |       |
| 105.000 | .0425  | -.0031 | .0340  | .0918  | -.0592 | -.0975 | -.1352 |       |       |
| 110.000 |        |        | .1721  | .1284  | -.1567 | -.1646 | -.1756 |       |       |
| 120.000 |        |        |        |        |        |        | -.2700 |       |       |
| 135.000 | .0147  | .0081  | .2267  | .0535  | -.0735 | -.2175 | -.3201 |       |       |
| 150.000 | -.0087 | .0284  | .2871  | .2968  | -.0014 | -.1008 | -.1426 |       |       |
|         |        |        | .3052  | .2968  | .0815  | -.0297 | -.1072 |       |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 1 -073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB833)

ALPHA ( 2 ) = -.050 BETA ( 3 ) = 4.256

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600  | .9980 | 1.0180 | 1.0460 |
|---------|--------|-------|-------|-------|-------|-------|--------|-------|--------|--------|
| PHI     |        |       |       |       |       |       |        |       |        |        |
| 165.000 | -.0158 | .3046 |       |       | .2445 | .0588 | -.3255 |       |        |        |
| 180.000 | -.0307 | .0203 | .3116 | .3161 |       |       |        |       |        |        |

ALPHA ( 3 ) = 3.895 BETA ( 1 ) = -3.869 MACH = 1.3948 Q = 599.42 P = 440.18 RN/L = 2.9147

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1680 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| .000    | 1.4703 | .9227 | .4363 | .2666 | .1679 |       |       | .0470 | .0307  | .0375  | .0390  | .0509  | .0237  | .0186  |       |
| 20.000  |        |       | .4807 | .2912 | .1764 | .0771 |       | .0637 | .0212  | .0217  | .0592  | .0452  | .0136  | .0325  |       |
| 40.000  |        |       | .6230 | .3523 | .2558 | .1344 |       | .0896 | .0217  | .1757  |        |        |        |        |       |
| 55.000  |        |       | .6935 | .4365 | .3471 | .2094 |       | .1849 |        |        |        |        |        |        |       |
| 70.000  |        |       | .6997 | .4457 | .3462 | .2292 |       | .1938 | .2125  | -.1327 | -.0490 | -.0426 | -.0853 |        |       |
| 90.000  |        | .8738 | .7006 | .4601 | .3337 | .2356 |       | .2688 | .1917  | -.1265 | -.1073 | -.0903 | -.0835 |        |       |
| 120.000 |        |       | .6636 | .4714 | .3332 | .3009 |       | .5567 | .1747  | -.1160 | -.3135 | -.2368 | -.1467 |        |       |
| 140.000 |        |       |       |       |       |       |       |       | .1077  | -.3911 | -.3244 | -.1863 | -.1093 |        |       |
| 150.000 |        |       | .5727 | .4462 | .2754 | .2962 |       | .9405 | .7057  |        |        |        |        |        |       |
| 151.000 |        |       |       |       |       |       |       |       | .7491  |        |        |        |        |        |       |
| 162.000 |        |       |       |       |       |       |       |       |        | -.2440 | -.3569 | -.2755 | -.1844 | -.0923 |       |
| 165.000 |        |       |       |       |       |       |       | .9905 |        |        |        |        |        |        |       |
| 169.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 174.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 180.000 | 1.4703 | .7620 | .4842 | .4146 | .2558 | .2757 | .9495 | .9146 | -.3451 | -.3805 | -.2375 | -.1991 | -.0784 |        |       |

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9980  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| .000    | .0382  | .0483  | .0641  | .0299  | -.0306 | -.0825 | -.1359 |        | .3447  | .3291  |
| 40.000  | .0573  | .0618  | .0618  | .0275  | -.0517 | -.0379 | -.1508 |        | .2438  | .1769  |
| 70.000  | -.0503 | -.1500 | -.1982 | -.0878 | -.0218 | -.0728 | -.0559 |        |        |        |
| 90.000  | -.0239 | -.0902 | -.1664 | .0536  | -.0614 | -.0893 | -.1343 |        |        |        |
| 105.000 |        |        | -.1015 | .1156  | -.1012 | -.1975 | -.1709 |        |        |        |
| 110.000 |        |        |        |        |        |        |        |        |        |        |
| 120.000 | -.0938 | -.1028 | .1994  | .1512  | -.0102 | -.1583 | -.2165 | -.2725 |        |        |
| 135.000 |        |        | .2319  | .2345  | -.0180 | -.1238 | -.0863 | -.2487 |        |        |
| 150.000 | -.0477 | -.0029 | .2294  | .2347  | -.0507 | .0470  | -.0254 |        |        |        |
| 165.000 | -.0363 |        | .2375  | .2818  | .1715  | -.2567 |        |        |        |        |
| 180.000 | -.0339 | .0570  | .2258  | .2707  |        |        |        |        |        |        |

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8833)

ALPHA ( 3 ) = 3.895 BETA ( 2 ) = .190 MACH = 1.3948 Q = 599.42 P = 440.18 RN/L = 2.9147

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 20.000  | 1.4731 | .9219 | .4405 | .2612 | .1765 |       |       | .0529 | .0381  | .0286  | .0547  | .0564  | .0250  | .0241  |       |
| 40.000  |        |       | .4599 | .2724 | .1692 | .0885 |       | .0496 | .0253  |        |        |        | .0134  | .0182  |       |
| 60.000  |        |       | .5518 | .3030 | .2226 | .1091 |       | .0756 | .0130  | .0711  | .0403  | .0498  |        |        |       |
| 80.000  |        |       | .5905 | .3396 | .2721 | .1402 |       | .1216 | .1156  |        |        |        |        |        |       |
| 100.000 |        |       | .5952 | .3394 | .2570 | .1501 |       | .1265 | .1581  | -.1770 | -.1028 | -.0971 | -.1052 |        |       |
| 120.000 | .7367  |       | .6007 | .3588 | .2433 | .1537 |       | .2075 | .1116  | -.1860 | -.1727 | -.1441 | -.0893 |        |       |
| 140.000 |        |       | .5881 | .4074 | .2688 | .2417 |       | .4791 | .0834  | -.1912 | -.3640 | -.1956 | -.0984 |        |       |
| 160.000 |        |       | .5376 | .4374 | .2568 | .2721 |       | .8443 | .0024  | -.2054 | -.3951 | -.2896 | -.1732 | -.0659 |       |
| 180.000 |        |       |       |       |       |       |       |       | .6225  |        |        |        |        |        |       |
|         |        |       |       |       |       |       |       |       | .6921  |        |        |        |        |        |       |
|         |        |       |       |       |       |       |       | .9510 |        | -.2415 | -.3583 | -.2533 | -.1862 | -.0595 |       |
|         |        |       |       |       |       |       | .9477 |       |        | -.3824 | -.3894 | -.2110 | -.1886 | -.0567 |       |
| X/LB    | 1.4731 | .7504 | .4993 | .4232 | .2787 | .2849 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |

PHI

|         |        |        |        |        |        |        |        |        |       |       |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--|--|--|--|--|
| 20.000  | .0297  | .0607  | .0720  | .0389  | -.0278 | -.0769 | -.1307 |        |       |       |  |  |  |  |  |
| 40.000  | .0590  |        | .0777  | .0412  | -.0368 | -.0440 | -.1418 |        | .3523 | .3289 |  |  |  |  |  |
| 60.000  | -.0614 | -.1773 | -.1955 | -.0295 | -.0500 | -.1080 | -.1033 |        | .2310 | .1690 |  |  |  |  |  |
| 80.000  | -.0196 | -.1200 | -.1195 | .0374  | -.1192 | -.1189 | -.1537 |        |       |       |  |  |  |  |  |
| 100.000 |        |        | .0821  | .0657  | -.1765 | -.2320 | -.1929 |        |       |       |  |  |  |  |  |
| 120.000 | -.0217 | -.0416 | .1971  | .1350  | -.0326 | -.1799 | -.2504 | -.2811 |       |       |  |  |  |  |  |
| 140.000 |        |        | .2037  | .2520  | .0329  | -.0815 | -.1220 | -.2800 |       |       |  |  |  |  |  |
| 160.000 | -.0158 | .0045  | .2106  | .3393  | .0849  | .0000  | -.0775 |        |       |       |  |  |  |  |  |
| 180.000 | -.0170 | .2180  | .2180  | .2731  | .0799  | -.2823 |        |        |       |       |  |  |  |  |  |
|         | -.0228 | .0051  | .2279  | .3899  |        |        |        |        |       |       |  |  |  |  |  |

ALPHA ( 3 ) = 3.895 BETA ( 3 ) = 4.246 MACH = 1.3948 Q = 599.42 P = 440.18 RN/L = 2.9147

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0090 | .0230 | .0460 | .0700 | .1120 | .1580 | .1650 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |       |       |
| 20.000  | 1.4585 | .9109 | .4356 | .2584 | .1818 |       |       | .0426 | .0298  | .0258  | .0440  | .0613  | .0233  | .0156 |       |
| 40.000  |        |       | .4240 | .2453 | .1516 | .0799 |       | .0381 | .0161  |        |        |        |        |       |       |
| 60.000  |        |       | .4677 | .2552 | .1741 | .0820 |       | .0549 | .0008  | .0636  | .0287  | .0454  | -.0089 | .0338 |       |
| 80.000  |        |       | .4849 | .2538 | .1939 | .0714 |       | .0529 | .0676  |        |        |        |        |       |       |
| 100.000 |        |       | .4858 | .2413 | .1734 | .0759 |       | .0688 | .1070  | -.2172 | -.1559 | -.1486 | -.1123 |       |       |
| 120.000 | .5836  |       | .5005 | .2625 | .1613 | .0744 |       | .1488 | .0341  | -.2363 | -.2258 | -.1902 | -.0941 |       |       |
|         |        |       | .5097 | .3380 | .1988 | .1712 |       | .3765 | -.0025 | -.2682 | -.4227 | -.1673 | -.0721 |       |       |

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AMES 11-073(0A148) - 140A/B/C/R ORB FUSELAGE

(XEB233)

ALPHA ( 3 ) = 3.856 BETA ( 3 ) = 4.246

## SECTION ( 1 ) ORBITTER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .5740 |
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

|         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| PHI     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 140.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 150.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 151.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 162.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 165.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 169.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 174.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 180.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

ALPHA ( 4 ) = 7.947 BETA ( 1 ) = -3.865 MACH = 1.3944 Q = 599.72 P = 440.65 RN/L = 2.9146

## SECTION ( 1 ) ORBITTER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

.8131

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ALPHA ( 4 ) = 7.947 BETA ( 1 ) = -3.855

(XF8833)

AMES 11-073-0A148) -140A/B/C/R ORB FUSELAGE

## SECTION ( 1 ) ORBITTER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | 0.000  | 0.090  | 0.230  | 0.460  | 0.700  | 1.120  | 1.580  | 1.660  | 1.770  | 2.040  | 2.510  | 3.010  | 3.780  | 4.970  | 5.740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 190.000 | 1.4371 | .6170  | .3617  | .3197  | .1831  | .1F43  |        | .8665  |        | -.3809 | -.4176 | -.2688 | -.2142 | -.0661 |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| .000    | .1034  | .1171  | .1336  | .1004  | .0408  | -.0120 | -.0611 |        | .4531  | .4135  |        |        |        |        |       |
| 40.000  | .1390  |        | .1496  | .1132  | .0188  | .0176  | -.0888 |        | .3335  | .2526  |        |        |        |        |       |
| 70.000  | -.1343 | -.2300 | -.2794 | -.2278 | -.1376 | -.1362 | -.0927 |        |        |        |        |        |        |        |       |
| 90.000  | -.0991 | -.1956 | -.2366 | -.0324 | -.1372 | -.1963 | -.2139 |        |        |        |        |        |        |        |       |
| 105.000 |        |        | -.1143 | .0241  | -.1596 | -.2635 | -.2790 |        |        |        |        |        |        |        |       |
| 110.000 |        |        |        |        |        |        |        | -.3164 |        |        |        |        |        |        |       |
| 120.000 | -.1807 | -.1735 | .0781  | .0692  | -.0615 | -.1966 | -.2337 | -.2983 |        |        |        |        |        |        |       |
| 135.000 |        |        | .0594  | .1249  | -.0480 | -.1307 | -.1243 |        |        |        |        |        |        |        |       |
| 150.000 | -.0873 | -.0353 | .0628  | .1259  | .0351  | -.0003 | -.0921 |        |        |        |        |        |        |        |       |
| 165.000 | -.0583 |        | .0755  |        | .2476  | .1290  | -.2978 |        |        |        |        |        |        |        |       |
| 180.000 | -.0484 | -.0246 | .1322  | .3281  |        |        |        |        |        |        |        |        |        |        |       |

ALPHA ( 4 ) = 7.946 BETA ( 2 ) = .185 MACH = 1.3944

RNL = 2.9146

P = 440.65

Q = 599.72

O = 1.3944

## SECTION ( 1 ) ORBITTER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | 0.000  | 0.080  | 0.230 | 0.460 | 0.700 | 1.120  | 1.580  | 1.660 | 1.770  | 2.040  | 2.510  | 3.010  | 3.780  | 4.970  | 5.740 |
|---------|--------|--------|-------|-------|-------|--------|--------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |       |       |       |        |        |       |        |        |        |        |        |        |       |
| .000    | 1.4431 | 1.0432 | .5586 | .3768 | .2687 |        |        | .1167 |        | .0968  | .0779  | .0763  | .1056  | .0824  | .0809 |
| 20.000  |        |        | .5697 | .3762 | .2565 | .1665  |        | .1148 |        | .0814  |        |        |        |        |       |
| 40.000  |        |        | .6290 | .3956 | .2978 | .1777  |        | .1436 |        | .0632  | .1013  | .1018  | .1009  | .0649  | .0769 |
| 55.000  |        |        | .6172 | .3772 | .2988 | .1554  |        | .1304 |        | .0786  |        |        |        |        |       |
| 70.000  |        |        |       | .3432 | .2581 | .1542  |        | .1257 |        | .1472  | -.1461 | -.0826 | -.0920 | -.1533 |       |
| 90.000  |        | .6886  | .5853 | .3328 | .2383 | .1372  |        | .1372 |        | .1502  | -.1643 | -.1251 | -.1386 | -.1645 |       |
| 120.000 |        |        | .5125 | .3252 | .2163 | .1845  |        | .4654 |        | .1036  | -.1851 | -.3578 | -.3299 | -.1713 |       |
| 140.000 |        |        |       |       |       |        |        |       | .0147  |        |        |        |        |        |       |
| 150.000 |        |        | .4330 | .3351 | .1865 | .1960  |        | .7969 |        | -.2140 | -.4361 | -.3417 | -.1845 | -.0720 |       |
| 151.000 |        |        |       |       |       |        |        |       | .6104  |        |        |        |        |        |       |
| 162.000 |        |        |       |       |       |        |        |       | .6675  |        |        |        |        |        |       |
| 155.000 |        |        |       |       |       |        |        | .8907 |        | -.2837 | -.4003 | -.2916 | -.1980 | -.0524 |       |
| 169.000 |        |        |       |       |       |        |        |       |        |        |        |        |        |        |       |
| 174.000 |        |        |       |       |       |        |        |       |        |        |        |        |        |        |       |
| 180.000 | 1.4431 | .6084  | .3796 | .3344 | .2017 | .1993  | .8479  | .8862 |        | -.4164 | -.4298 | -.2500 | -.2079 | -.0465 |       |
| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790 | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |        |       |       |       |        |        |       |        |        |        |        |        |        |       |
| .000    | .0920  | .1234  | .1461 | .1144 | .0477 | -.0074 | -.0478 |       | .4575  | .4019  |        |        |        |        |       |
| 40.000  | .1203  |        | .1591 | .1215 | .0396 | .0125  | -.0833 |       | .3175  | .2555  |        |        |        |        |       |

(XEB833)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 7.946 BETA ( 2 ) = .185

## SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| 70.000  | -.1358 | -.2482 | -.2681 | -.1009 | -.1510 | -.1610 | -.1457 |        |        |        |
| 90.000  | -.0736 | -.1835 | -.2263 | -.0162 | -.1929 | -.2093 | -.2067 |        |        |        |
| 105.000 |        |        | -.0346 | .0505  | -.2264 | -.2993 | -.2837 |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.3151 |        |        |
| 120.000 | -.0692 | -.0860 | .0942  | .0403  | -.0834 | -.2107 | -.2784 | -.3369 |        |        |
| 135.000 |        |        | .0846  | .1446  | -.0255 | -.1296 | -.1734 |        |        |        |
| 150.000 | -.0389 | -.0413 | .0912  | .3661  | .0332  | -.0579 | -.1188 |        |        |        |
| 165.000 | -.0311 |        | .0970  | .2311  | .0105  |        | -.2977 |        |        |        |
| 180.000 | -.0307 | -.0189 | .1318  | .3938  |        |        |        |        |        |        |

ALPHA ( 4 ) = 7.944 BETA ( 3 ) = 4.238 MACH = 1.3944 Q = 599.72 P = 440.65 RN/L = 2.9148

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|-------|
| PHI     |        |        |       |       |       |       |       |       |        |        |        |        |        |       |       |
| .000    | 1.4314 | 1.0281 | .5485 | .3764 | .2683 |       |       | .1109 | .0872  | .0775  | .0724  | .1090  | .0801  | .0753 |       |
| 20.000  |        |        | .5283 | .3509 | .2328 | .1424 |       | .0944 | .0712  |        |        |        |        |       |       |
| 40.000  |        |        | .5344 | .3401 | .2446 | .1336 |       | .1026 | .0340  | .0608  | .0688  | .0900  | .0430  | .0569 |       |
| 55.000  |        |        | .5020 | .2848 | .2111 | .0776 |       | .0594 | .0234  |        |        |        |        |       |       |
| 70.000  |        |        | .4765 | .2458 | .1729 | .0835 |       | .0658 | .1043  | -.1842 | -.1322 | -.1441 | -.1913 |       |       |
| 90.000  | .5422  |        | .4727 | .2435 | .1549 | .0693 |       | .0875 | .0804  | -.2080 | -.1755 | -.1852 | -.1514 |       |       |
| 120.000 |        |        | .4441 | .2704 | .1570 | .1348 |       | .3840 | .0262  | -.2523 | -.3980 | -.2233 | -.0598 |       |       |
| 140.000 |        |        |       |       |       |       |       |       | -.0905 |        |        |        |        |       |       |
| 150.000 |        |        | .3961 | .3195 | .1558 | .1615 |       | .7429 | -.2783 | -.4400 | -.3287 | -.1824 | -.0560 |       |       |
| 151.000 |        |        |       |       |       |       |       |       | .5142  |        |        |        |        |       |       |
| 162.000 |        |        |       |       |       |       |       |       | .5886  |        |        |        |        |       |       |
| 165.000 |        |        |       |       |       |       |       | .8464 | -.2924 | -.4305 | -.2620 | -.2131 | -.0555 |       |       |
| 169.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |       |       |
| 174.000 |        |        |       |       |       |       |       | .8037 |        |        |        |        |        |       |       |
| 180.000 | 1.4314 | .5840  | .3791 | .3403 | .2021 | .1901 |       | .9939 | -.4000 | -.4094 | -.2725 | -.2119 | -.0707 |       |       |

| X/LB | .6520 | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|

|         |        |        |        |        |        |        |        |        |       |       |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| PHI     |        |        |        |        |        |        |        |        |       |       |
| .000    | .0860  | .1249  | .1396  | .1082  | .0413  | -.0091 | -.0341 |        |       |       |
| 40.000  | .1042  |        | .1682  | .1291  | .0410  | -.0003 | -.0866 |        | .4705 | .4165 |
| 70.000  | -.1205 | -.2363 | -.2580 | -.0939 | -.1404 | -.1687 | -.1904 |        | .3109 | .2611 |
| 90.000  | -.0605 | -.1692 | -.1425 | -.0286 | -.2135 | -.2057 | -.2002 |        |       |       |
| 105.000 |        |        | .0252  | .0032  | -.2756 | -.3297 | -.2693 |        |       |       |
| 110.000 |        |        |        |        |        |        |        | 1.3356 |       |       |
| 120.000 | -.0331 | -.0592 | .0744  | -.0708 | -.1268 | -.2717 | -.3603 | 1.3926 |       |       |
| 135.000 |        |        | .1417  | .2178  | -.0741 | -.1701 | -.2094 |        |       |       |
| 150.000 | -.0355 | -.0187 | .1633  | .2946  | -.0449 | -.1265 | -.1832 |        |       |       |

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 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB833)

ALPHA ( 4 ) = 7.944 BETA ( 3 ) = 4.238

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI  
 165.000 -.0329 .1165 .1820 -.0607 -.3281  
 180.000 -.0466 -.0075 .1152 .2841

ALPHA ( 5 ) = 11.859 BETA ( 1 ) = -3.851 MACH = 1.3955 Q = 599.73 P = 439.94 RN/L = 2.9121

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI  
 .000 1.3887 1.1489 .6763 .4903 .3565 .2531 .2012 .1639 .1438 .1228 .1451 .1515 .1439  
 20.000 .7209 .5118 .3633 .2631 .2012 .1587 .1386 .1544 .1757 .1805 .1783 .1451 .1704  
 40.000 .7926 .5505 .4263 .2821 .2488 .1937 .1386 .1297 .1297 .1297 .1297 .1297 .1297  
 55.000 .7478 .5158 .4062 .2469 .2078 .1937 .1937 .1937 .1937 .1937 .1937 .1937 .1937  
 70.000 .6792 .4550 .3407 .2469 .1937 .1937 .1937 .1937 .1937 .1937 .1937 .1937 .1937  
 90.000 .5202 .4112 .2985 .1816 .1584 .1584 .1584 .1584 .1584 .1584 .1584 .1584 .1584  
 120.000 .4943 .3063 .1816 .1584 .1584 .1584 .1584 .1584 .1584 .1584 .1584 .1584 .1584  
 140.000 .3507 .2208 .1439 .1327 .1327 .1327 .1327 .1327 .1327 .1327 .1327 .1327 .1327  
 150.000 .3507 .2208 .1439 .1327 .1327 .1327 .1327 .1327 .1327 .1327 .1327 .1327 .1327  
 151.000 .3507 .2208 .1439 .1327 .1327 .1327 .1327 .1327 .1327 .1327 .1327 .1327 .1327  
 165.000 .3507 .2208 .1439 .1327 .1327 .1327 .1327 .1327 .1327 .1327 .1327 .1327 .1327  
 169.000 .3507 .2208 .1439 .1327 .1327 .1327 .1327 .1327 .1327 .1327 .1327 .1327 .1327  
 174.000 .3507 .2208 .1439 .1327 .1327 .1327 .1327 .1327 .1327 .1327 .1327 .1327 .1327  
 180.000 .3507 .2208 .1439 .1327 .1327 .1327 .1327 .1327 .1327 .1327 .1327 .1327 .1327

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI  
 .000 1.800 .2015 .2222 .1846 .1276 .0802 .0209 .5668 .4821  
 40.000 .2222 .2559 .2559 .1993 .1134 .1067 .0252 .4136 .3080  
 70.000 .1767 .3339 .3619 .2734 .1947 .0747 .0899 .4136 .3080  
 90.000 .1514 .2604 .3046 .0878 .1938 .1910 .0852 .4136 .3080  
 105.000 .2629 .0035 .2131 .2776 .1898 .1898 .1898 .4136 .3080  
 110.000 .1874 .1952 .0361 .0863 .1294 .2236 .2368 .4136 .3080  
 120.000 .1874 .1952 .0361 .0863 .1294 .2236 .2368 .4136 .3080  
 135.000 .0793 .1735 .1507 .2298 .0511 .1348 .2041 .4136 .3080  
 150.000 .0826 .0956 .0956 .2152 .0236 .0236 .0236 .4136 .3080  
 180.000 .0608 .0623 .0644 .3477 .3477 .3477 .3477 .4136 .3080

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

(XE 8833)

ALPHA ( 5 ) = 11.955    BETA ( 2 ) = .189    MACH = 1.3955    Q = 599.73    P = 439.94    RN/L = 2.9121

## SECTION 11 ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

[illegible]

ALPHA ( 5 ) = 11.860    BETA ( 3 ) = 4.253    MACH = 1.3955    Q = 599.73    P = 439.94    RN/L = 2.9121

# SELECTION : 100317ER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .2000  | .0090  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| .000    | 1.3842 | 1.1375 | .6648 | .4821 | .3554 | .2099 | .1853 | .1853 | .1208  | .1528  | .1339  | .1208  | .1476  | .1466  | .1461 |
| 20.000  |        |        | .6377 | .4506 | .3136 | .2099 | .1580 | .1580 |        | .1283  |        |        |        |        |       |
| 40.000  |        |        | .5957 | .4122 | .3011 | .1850 | .1410 | .1410 | .0759  | .0544  | .0645  | .1301  | .1032  | .1197  |       |
| 50.000  |        |        | .5059 | .3016 | .2134 | .0545 | .0448 | .0448 |        | -.0049 |        |        |        |        |       |
| 70.000  |        |        | .4627 | .2412 | .1644 | .0780 | .0592 | .0592 |        | .0206  |        |        |        |        |       |
| 90.000  |        | .4940  | .4402 | .2181 | .1379 | .0540 | .0651 | .0651 | -.1541 | .0969  | -.1541 | -.1191 | -.1450 | -.2320 |       |
| 120.000 |        |        | .3656 | .2014 | .1080 | .0896 | .3029 | .3029 | -.1890 | .0869  | -.1890 | -.1478 | -.1808 | -.2384 |       |
|         |        |        |       |       |       |       |       |       | -.3786 | .0374  | -.2395 | -.3786 | -.3767 | -.1434 |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073-1(0A148) -140A/B/C/R ORB FUSELAGE

(XEB933)

ALPHA ( 5 ) = 11.860 BETA ( 3 ) = 4.253

SECTION ( 1 ) ORBITTER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 140.000 |        |       | .2953 | .2276 | .1038 | .1038 |       | .6671 |        |        |       |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 151.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 163.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 180.000 | 1.3842 | .4387 | .2636 | .2516 | .1356 | .1179 | .6742 | .8216 |        |        |       |       |       |       |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |

PHI

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 140.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 163.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 | 1.3842 | .4387 | .2636 | .2516 | .1356 | .1179 | .6742 | .8216 |       |       |       |       |       |       |       |

ALPHA ( 6 ) = 15.849 BETA ( 1 ) = -3.830 MACH = 1.3950 Q = 599.93 P = 440.41 RN/L = 2.9147

SECTION ( 1 ) ORBITTER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 163.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 | 1.3183 | 1.2451 | .7967 | .5976 | .4622 | .3429 | .2672 | .2625 | .2375 | .2408 | .2096 | .1910 | .2113 | .2215 | .2342 |
| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |

.5859

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-07310A148) -140A/B/C/R ORB FUSELAGE

(XE8833)

ALPHA ( 6 ) = 15.849 BETA ( 1 ) = -3.830

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 180.000 | 1.3183 | .3179  | .1548  | .1403  | .0540  | .0654  |        | .7271  |        | -.4395 | -.4576 | -.3026 | -.1916 | -.0703 |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| .000    | .2762  | .2995  | .3229  | .3048  | .2426  | .1575  | .0897  |        | .6701  | .5385  |        |        |        |        |       |
| 40.000  | .3163  |        | .3618  | .3180  | .2168  | .1608  | .0237  |        | .4912  | .3697  |        |        |        |        |       |
| 70.000  | -.2514 | -.4377 | -.5203 | -.4578 | -.4375 | -.3711 | -.1456 |        |        |        |        |        |        |        |       |
| 90.000  | -.1415 | -.3094 | -.3720 | -.1913 | -.2649 | -.2999 | -.2179 |        |        |        |        |        |        |        |       |
| 100.000 |        |        | -.2909 | -.0357 | -.2809 | -.3593 | -.3524 |        |        |        |        |        |        |        |       |
| 110.000 |        |        |        |        |        |        |        | -.3050 |        |        |        |        |        |        |       |
| 120.000 | -.2238 | -.1930 | -.1068 | .0959  | -.1904 | -.2731 | -.2758 | -.3338 |        |        |        |        |        |        |       |
| 130.000 |        |        | -.0370 | .0425  | -.1935 | -.1770 | -.2117 |        |        |        |        |        |        |        |       |
| 140.000 | -.2828 | -.3207 | -.1730 | .1447  | -.3661 | -.2716 | -.3006 |        |        |        |        |        |        |        |       |
| 150.000 |        |        | -.1986 |        | .1686  | -.0523 | -.3482 |        |        |        |        |        |        |        |       |
| 160.000 | -.1179 |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 180.000 | -.0773 | -.0993 | -.1015 | .2393  |        |        |        |        |        |        |        |        |        |        |       |

ALPHA ( 6 ) = 15.853 BETA ( 2 ) = .186 MACH = 1.3950 Q = 599.93 P = 440.41 R/V/L = 2.9147

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| .000    | 1.3240 | 1.2508 | .7968 | .6029 | .4698 |       |       | .2705 |        | .2461  | .2151  | .1969  | .2196  | .2347  | .2348 |
| 20.000  |        |        | .8027 | .5963 | .4413 | .3184 |       | .2584 |        | .2246  | .1619  | .1767  | .2085  | .2059  | .2270 |
| 40.000  |        |        | .7639 | .5630 | .4404 | .3122 |       | .2436 |        | .1572  |        |        |        |        |       |
| 55.000  |        |        | .6276 | .4130 | .3080 | .1256 |       | .0902 |        | .0485  |        |        |        |        |       |
| 70.000  |        |        | .5339 | .3302 | .2313 | .1418 |       | .1024 |        | .0540  | -.1093 | -.0772 | -.0828 | -.1924 |       |
| 90.000  | .5693  |        | .4722 | .2766 | .1858 | .0916 |       | .0958 |        | .1475  | -.1372 | -.0793 | -.1156 | -.1948 |       |
| 120.000 |        |        | .3510 | .1735 | .0669 | .0581 |       | .3198 |        | .1142  | -.1764 | -.3314 | -.5210 | -.3163 |       |
| 140.000 |        |        | .2294 | .1360 | .0588 | .0677 |       | .6340 |        | .0332  | -.4919 | -.4424 | -.2375 | -.1000 |       |
| 150.000 |        |        |       |       |       |       |       |       | .549   |        |        |        |        |        |       |
| 151.000 |        |        |       |       |       |       |       |       | .6078  |        |        |        |        |        |       |
| 162.000 |        |        |       |       |       |       |       |       |        | -.3470 | -.4496 | -.3329 | -.1834 | -.0625 |       |
| 165.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 169.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 174.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 180.000 | 1.3240 | .2880  | .1625 | .1695 | .0725 | .0713 |       | .7378 |        |        |        |        |        |        |       |
| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| .000    | .2695  | .2994  | .3546 | .3152 | .2494 | .1668 | .1138 |       | .6679  | .5315  |        |        |        |        |       |
| 40.000  | .2919  |        | .3723 | .3346 | .2762 | .1611 | .0260 |       | .4982  | .3850  |        |        |        |        |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEBB33)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 6 ) = 15.859 BETA ( 2 ) = .186

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

70.000 -.3404 -.4833 -.5409 -.4568 -.4947 -.4060 -.2097  
 90.000 -.2073 -.3246 -.3966 -.2543 -.3684 -.3568 -.2849  
 105.000 .105.000 -.2831 -.0805 -.4031 -.4389 -.4026  
 110.000  
 120.000 -.1180 -.1587 -.0807 -.0103 -.1892 -.2520 -.3228  
 135.000 .0088 -.1113 -.1175 -.2302  
 150.000 -.1500 -.1691 -.1841 .2558 -.2719 -.2256 -.2617  
 165.000 -.0748 -.1036 .2426 -.0725 -.3601  
 180.000 -.0706 -.0544 -.0734 .2717

-.3989  
 -.3792

ALPHA ( 6 ) = 15.851 BETA ( 3 ) = 4.283 MACH = 1.3950 Q = 599.93 P = 440.41 RN/L = 2.9147

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.3191 1.2385 .7912 .5942 .4616 .2958 .2723 .2369 .2102 .1977 .2157 .2240 .2301  
 20.000 .7535 .5527 .4102 .2958 .2353 .1977 .0845 .1202 .1691 .1720 .2035  
 40.000 .6574 .4835 .3646 .2412 .1662 .0845 .0694 .1202 .1691 .1720 .2035  
 55.000 .4986 .3043 .2038 .0250 .0026 .0407 .0098 .1433 .1270 .1496 .2854  
 70.000 .4138 .2294 .1459 .0708 .0346 .1050 .1723 .1314 .1711 .2449  
 90.000 .4395 .3889 .1911 .1134 .0313 .0435 .0588 .2266 .3552 .4819 .2012  
 120.000 .3095 .1327 .0477 .0403 .2984 .0487 .2799 .4886 .3798 .1802 .0731  
 140.000 .2113 .1362 .0583 .0548 .6024 .4690 .5347  
 151.000  
 163.000  
 165.000  
 169.000  
 174.000  
 180.000 1.3191 .2737 .1618 .1638 .0816 .0593 .5942 .7102 .7601 .4539 .4464 .3000 .1978 .0662

X/LB

PHI

.000 .2645 .3137 .3389 .2978 .2288 .1705 .1145 .6709 .5326  
 40.000 .2593 .3600 .3075 .2170 .1502 .0262 .5017 .5924  
 70.000 .3991 .4499 .4273 .3694 .3628 .2255  
 90.000 .2207 .3473 .3978 .2645 .3949 .3696 .3343  
 105.000 .2404 .1696 .5026 .5219 .4740  
 110.000  
 120.000 -.0968 -.1311 -.0418 -.1875 .1741 .2820 .3898  
 135.000 .1781 .0573 .1752 .2541 .2828  
 150.000 -.0780 -.0855 .1093 .2340 .0258 .1326 .2129

-.4213  
 -.3900

DATE 10 FEB 76      TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
 AMES 11-073(0A148) -140A/B/C/F ORB FUSELAGE

(XE8833)

ALPHA ( 6 ) = 15.851    BETA ( 3 ) = 4.283

SECTION ( 1 ) ORBITER FUSELAGE      DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790 | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|-------|--------|--------|-------|--------|--------|
| PHI     |        |        |        |       |       |        |        |       |        |        |
| 165.000 | -.0552 |        | -.0831 |       | .2798 | -.0739 | -.3575 |       |        |        |
| 180.000 | -.0742 | -.1015 | -.1009 | .2503 |       |        |        |       |        |        |

(XE8834) ( 05 AUG 75 )

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. X0  
LREF = 474.8000 IN. YMRP = .0000 IN. Y0  
BREF = 936.0680 IN. ZMRP = 375.0000 IN. Z0  
SCALE = .0300

ALPHA ( 1 ) = -4.064 BETA ( 1 ) = -3.845 MACH = 1.2480 Q = 600.05 P = 550.40 RN/L = 3.0174

PARAMETRIC DATA

RUDDER = 10.000 SPOBRK = 35.000  
BOFLAP = 16.300 L-ELVN = .000  
R-ELVN = 10.000 MACH = 1.250

SECTION ( 1 ) ORBITER FUSELAGE

| DEPENDENT VARIABLE CP |        | DEPENDENT VARIABLE CP |        |
|-----------------------|--------|-----------------------|--------|
| X/LB                  | 0.000  | 0.080                 | 0.230  |
| PHI                   | 1.4043 | .6275                 | .1851  |
| 20.000                | .0720  | .0632                 | .0012  |
| 40.000                | .1139  | .0445                 | -.0143 |
| 60.000                | .2186  | .2187                 | .1231  |
| 80.000                | .4096  | .3170                 | .2696  |
| 100.000               | .7309  | .4860                 | .3703  |
| 120.000               | .8054  | .6144                 | .4653  |
| 140.000               | .7929  | .6471                 | .5387  |
| 160.000               |        |                       | .6102  |
| 180.000               |        |                       |        |
| PHI                   | 1.4043 | 1.0075                | .7332  |
| 20.000                | .6127  | .5272                 | .6078  |
| 40.000                | .8210  | .8790                 | .9210  |
| 60.000                |        |                       |        |
| 80.000                |        |                       |        |
| 100.000               |        |                       |        |
| 120.000               |        |                       |        |
| 140.000               |        |                       |        |
| 160.000               |        |                       |        |
| 180.000               |        |                       |        |

|         |        |        |        |        |        |        |        |
|---------|--------|--------|--------|--------|--------|--------|--------|
| PHI     | .0041  | -.0249 | -.0562 | -.1215 | -.1962 | -.2503 | -.2970 |
| 20.000  | -.0683 | -.0816 | -.0108 | -.3149 | -.1501 | -.0596 | -.3731 |
| 40.000  | .0943  | .0430  | .1795  | .2745  | .1253  | .0189  | .0339  |
| 60.000  |        |        | .3074  | .2731  | .0492  | -.0383 | -.0669 |
| 80.000  |        |        | .4294  | .2974  | .0147  | -.0347 | -.0494 |
| 100.000 |        |        | .4720  | .4897  | .0650  | .0672  | .0329  |
| 120.000 |        |        | .4710  | .4752  | .1565  | .1503  | .0567  |
| 140.000 |        |        | .4636  | .4354  | .4354  | .2374  | -.3151 |
| 160.000 |        |        | .4189  | .4867  |        |        |        |
| 180.000 |        |        |        |        |        |        |        |

|         |        |        |        |        |        |        |        |
|---------|--------|--------|--------|--------|--------|--------|--------|
| PHI     | .0041  | -.0249 | -.0562 | -.1215 | -.1962 | -.2503 | -.2970 |
| 20.000  | -.0683 | -.0816 | -.0108 | -.3149 | -.1501 | -.0596 | -.3731 |
| 40.000  | .0943  | .0430  | .1795  | .2745  | .1253  | .0189  | .0339  |
| 60.000  |        |        | .3074  | .2731  | .0492  | -.0383 | -.0669 |
| 80.000  |        |        | .4294  | .2974  | .0147  | -.0347 | -.0494 |
| 100.000 |        |        | .4720  | .4897  | .0650  | .0672  | .0329  |
| 120.000 |        |        | .4710  | .4752  | .1565  | .1503  | .0567  |
| 140.000 |        |        | .4636  | .4354  | .4354  | .2374  | -.3151 |
| 160.000 |        |        | .4189  | .4867  |        |        |        |
| 180.000 |        |        |        |        |        |        |        |

|         |        |        |        |        |        |        |        |
|---------|--------|--------|--------|--------|--------|--------|--------|
| PHI     | .0041  | -.0249 | -.0562 | -.1215 | -.1962 | -.2503 | -.2970 |
| 20.000  | -.0683 | -.0816 | -.0108 | -.3149 | -.1501 | -.0596 | -.3731 |
| 40.000  | .0943  | .0430  | .1795  | .2745  | .1253  | .0189  | .0339  |
| 60.000  |        |        | .3074  | .2731  | .0492  | -.0383 | -.0669 |
| 80.000  |        |        | .4294  | .2974  | .0147  | -.0347 | -.0494 |
| 100.000 |        |        | .4720  | .4897  | .0650  | .0672  | .0329  |
| 120.000 |        |        | .4710  | .4752  | .1565  | .1503  | .0567  |
| 140.000 |        |        | .4636  | .4354  | .4354  | .2374  | -.3151 |
| 160.000 |        |        | .4189  | .4867  |        |        |        |
| 180.000 |        |        |        |        |        |        |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8834)

ALPHA ( 1 ) = -4.041 BETA ( 2 ) = .192 MACH = 1.2480 Q = 600.05 P = 550.40 RN/L = 3.0174

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230 | .0460 | .0700 | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|--------|-------|-------|-------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | 1.4097 | .6283 | .2020 | .0556 | .0278  |       | -.0026 | .0032  | -.0062 | -.0507 | -.0735 | -.0948 | -.0561 |       |
| 20.000  |       |        | .2183 | .0652 | .0037 | -.0300 |       | -.0132 | -.0326 | -.1412 | -.1176 | -.0844 | -.0919 | -.0592 |       |
| 40.000  |       |        | .3587 | .0928 | .0334 | -.0276 |       | -.0526 | -.0173 |        |        |        |        |        |       |
| 55.000  |       |        | .4806 | .2216 | .1623 | .0685  |       | .0669  | .0174  | -.3345 | -.2034 | -.1162 | -.0030 |        |       |
| 70.000  |       |        | .5622 | .3033 | .2303 | .1823  |       | .1375  | .0838  | -.3184 | -.3145 | -.1212 | .0011  |        |       |
| 90.000  |       |        | .6304 | .3728 | .2758 | .2292  |       | .1658  | -.0392 | -.2717 | -.4906 | -.1874 | -.0346 |        |       |
| 120.000 |       |        | .7139 | .5201 | .3896 | .4508  |       | .3985  | -.1570 |        |        |        |        |        |       |
| 140.000 |       |        |       |       |       |        |       | .8581  | -.2785 | -.3626 | -.2454 | -.1603 | -.0585 |        |       |
| 150.000 |       |        | .7498 | .6133 | .5054 | .5721  |       | .5721  |        |        |        |        |        |        |       |
| 162.000 |       |        |       |       |       |        |       | .6489  | -.2703 | -.3460 | -.1711 | -.1694 | -.0625 |        |       |
| 165.000 |       |        |       |       |       |        |       | .9551  |        |        |        |        |        |        |       |
| 169.000 |       |        |       |       |       |        |       | .9473  | -.3460 | -.4027 | -.1483 | -.1655 | -.0653 |        |       |
| 174.000 |       |        |       |       |       |        |       |        |        |        |        |        |        |        |       |
| 180.000 |       |        |       |       |       |        |       |        |        |        |        |        |        |        |       |

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

| X/LB    | .0010 | -.0224 | -.0488 | -.1145 | -.1917 | -.2470 | -.2879 |  | .2243  | .2161  |
|---------|-------|--------|--------|--------|--------|--------|--------|--|--------|--------|
| 40.000  |       |        | -.0672 | -.1084 | -.1946 | -.1976 | -.3487 |  | .0727  | .0491  |
| 70.000  |       |        | .1111  | .2954  | .1060  | .0072  | -.0193 |  |        |        |
| 90.000  |       |        | .0806  | .0425  | .2249  | .0248  | -.0344 |  |        |        |
| 105.000 |       |        |        | .3315  | .2424  | -.0178 | -.1033 |  |        |        |
| 110.000 |       |        |        |        |        |        |        |  |        |        |
| 120.000 |       |        | .0713  | .1084  | .3674  | -.0515 | -.1516 |  | -.2573 | -.2460 |
| 135.000 |       |        | .0420  | .1276  | .4522  | .0158  | -.0199 |  |        |        |
| 150.000 |       |        | .0444  |        | .4765  | .1218  | .0468  |  |        |        |
| 165.000 |       |        |        | .4802  | .4734  | .3508  | .1183  |  |        |        |
| 180.000 |       |        | .0269  | .1341  | .4826  | .5723  |        |  |        |        |

ALPHA ( 1 ) = -4.051 BETA ( 3 ) = 4.275 MACH = 1.2480 Q = 600.05 P = 550.40 RN/L = 3.0174

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230 | .0460 | .0700 | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|--------|-------|-------|-------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | 1.3947 | .6153 | .1981 | .0470 | .0283  |       | -.0364 | -.0102 | -.0109 | -.0517 | -.0670 | -.0977 | -.0670 |       |
| 20.000  |       |        | .1990 | .0495 | .0055 | -.0383 |       | -.0123 | -.0199 | -.0847 | -.1079 | -.0776 | -.0866 | -.0417 |       |
| 40.000  |       |        | .2975 | .0615 | .0151 | -.0328 |       | -.0227 | -.0847 | -.0504 |        |        |        |        |       |
| 55.000  |       |        | .3899 | .1332 | .0844 | .0217  |       | -.0504 | -.0504 |        |        |        |        |        |       |
| 70.000  |       |        | .4558 | .1925 | .1293 | .0882  |       | -.0471 | -.0471 | -.3842 | -.2472 | -.1339 | -.0160 |        |       |
| 90.000  |       |        | .5201 | .2583 | .1826 | .1255  |       | -.0726 | -.1840 | -.3892 | -.3698 | -.1258 | -.0142 |        |       |
| 120.000 |       |        | .6134 | .4209 | .2746 | .3407  |       | -.0828 | -.1551 | -.3426 | -.5536 | -.2593 | -.0520 |        |       |

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

STABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
AMES 11-073(0A148) - 140A/B/C/R ORB FUSELAGE

$$\text{ALPHA} (1) = -4.051 \quad \text{BETA} (3) = 4.275$$

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| Year       | 1950 | 1951 | 1952 | 1953 | 1954 | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 | 2062 | 2063 | 2064 | 2065 | 2066 | 2067 | 2068 | 2069 | 2070 | 2071 | 2072 | 2073 | 2074 | 2075 | 2076 | 2077 | 2078 | 2079 | 2080 | 2081 | 2082 | 2083 | 2084 | 2085 | 2086 | 2087 | 2088 | 2089 | 2090 | 2091 | 2092 | 2093 | 2094 | 2095 | 2096 | 2097 | 2098 | 2099 | 2100 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
|------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Population | 150  | 155  | 160  | 165  | 170  | 175  | 180  | 185  | 190  | 195  | 200  | 205  | 210  | 215  | 220  | 225  | 230  | 235  | 240  | 245  | 250  | 255  | 260  | 265  | 270  | 275  | 280  | 285  | 290  | 295  | 300  | 305  | 310  | 315  | 320  | 325  | 330  | 335  | 340  | 345  | 350  | 355  | 360  | 365  | 370  | 375  | 380  | 385  | 390  | 395  | 400  | 405  | 410  | 415  | 420  | 425  | 430  | 435  | 440  | 445  | 450  | 455  | 460  | 465  | 470  | 475  | 480  | 485  | 490  | 495  | 500  | 505  | 510  | 515  | 520  | 525  | 530  | 535  | 540  | 545  | 550  | 555  | 560  | 565  | 570  | 575  | 580  | 585  | 590  | 595  | 600  | 605  | 610  | 615  | 620  | 625  | 630  | 635  | 640  | 645  | 650  | 655  | 660  | 665  | 670  | 675  | 680  | 685  | 690  | 695  | 700  | 705  | 710  | 715  | 720  | 725  | 730  | 735  | 740  | 745  | 750  | 755  | 760  | 765  | 770  | 775  | 780  | 785  | 790  | 795  | 800  | 805  | 810  | 815  | 820  | 825  | 830  | 835  | 840  | 845  | 850  | 855  | 860  | 865  | 870  | 875  | 880  | 885  | 890  | 895  | 900  | 905 | 910 | 915 | 920 | 925 | 930 | 935 | 940 | 945 | 950 | 955 | 960 | 965 | 970 | 975 | 980 | 985 | 990 | 995 | 1000 |

**PHI**

| Year | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 | 1948 | 1949 | 1950 | 1951 | 1952 | 1953 | 1954 | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 | 2062 | 2063 | 2064 | 2065 | 2066 | 2067 | 2068 | 2069 | 2070 | 2071 | 2072 | 2073 | 2074 | 2075 | 2076 | 2077 | 2078 | 2079 | 2080 | 2081 | 2082 | 2083 | 2084 | 2085 | 2086 | 2087 | 2088 | 2089 | 2090 | 2091 | 2092 | 2093 | 2094 | 2095 | 2096 | 2097 | 2098 | 2099 | 2100 | 2101 | 2102 | 2103 | 2104 | 2105 | 2106 | 2107 | 2108 | 2109 | 2110 | 2111 | 2112 | 2113 | 2114 | 2115 | 2116 | 2117 | 2118 | 2119 | 2120 | 2121 | 2122 | 2123 | 2124 | 2125 | 2126 | 2127 | 2128 | 2129 | 2130 | 2131 | 2132 | 2133 | 2134 | 2135 | 2136 | 2137 | 2138 | 2139 | 2140 | 2141 | 2142 | 2143 | 2144 | 2145 | 2146 | 2147 | 2148 | 2149 | 2150 | 2151 | 2152 | 2153 | 2154 | 2155 | 2156 | 2157 | 2158 | 2159 | 2160 | 2161 | 2162 | 2163 | 2164 | 2165 | 2166 | 2167 | 2168 | 2169 | 2170 | 2171 | 2172 | 2173 | 2174 | 2175 | 2176 | 2177 | 2178 | 2179 | 2180 | 2181 | 2182 | 2183 | 2184 | 2185 | 2186 | 2187 | 2188 | 2189 | 2190 | 2191 | 2192 | 2193 | 2194 | 2195 | 2196 | 2197 | 2198 | 2199 | 2200 | 2201 | 2202 | 2203 | 2204 | 2205 | 2206 | 2207 | 2208 | 2209 | 2210 | 2211 | 2212 | 2213 | 2214 | 2215 | 2216 | 2217 | 2218 | 2219 | 2220 | 2221 | 2222 | 2223 | 2224 | 2225 | 2226 | 2227 | 2228 | 2229 | 2230 | 2231 | 2232 | 2233 | 2234 | 2235 | 2236 | 2237 | 2238 | 2239 | 2240 | 2241 | 2242 | 2243 | 2244 | 2245 | 2246 | 2247 | 2248 | 2249 | 2250 | 2251 | 2252 | 2253 | 2254 | 2255 | 2256 | 2257 | 2258 | 2259 | 2260 | 2261 | 2262 | 2263 | 2264 | 2265 | 2266 | 2267 | 2268 | 2269 | 2270 | 2271 | 2272 | 2273 | 2274 | 2275 | 2276 | 2277 | 2278 | 2279 | 2280 | 2281 | 2282 | 2283 | 2284 | 2285 | 2286 | 2287 | 2288 | 2289 | 2290 | 2291 | 2292 | 2293 | 2294 | 2295 | 2296 | 2297 | 2298 | 2299 | 2300 | 2301 | 2302 | 2303 | 2304 | 2305 | 2306 | 2307 | 2308 | 2309 | 2310 | 2311 | 2312 | 2313 | 2314 | 2315 | 2316 | 2317 | 2318 | 2319 | 2320 | 2321 | 2322 | 2323 | 2324 | 2325 | 2326 | 2327 | 2328 | 2329 | 2330 | 2331 | 2332 | 2333 | 2334 | 2335 | 2336 | 2337 | 2338 | 2339 | 2340 | 2341 | 2342 | 2343 | 2344 | 2345 | 2346 | 2347 | 2348 | 2349 | 2350 | 2351 | 2352 | 2353 | 2354 | 2355 | 2356 | 2357 | 2358 | 2359 | 2360 | 2361 | 2362 | 2363 | 2364 | 2365 | 2366 | 2367 | 2368 | 2369 | 2370 | 2371 | 2372 | 2373 | 2374 | 2375 | 2376 | 2377 | 2378 | 2379 | 2380 | 2381 | 2382 | 2383 | 2384 | 2385 | 2386 | 2387 | 2388 | 2389 | 2390 | 2391 | 2392 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|

**87/X**

| PHI     | - .0101 | - .0176 | - .0549 | - .1193 | - .1983 | - .2444 | - .2826 | .2302   | .1892 |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------|
| .000    | - .0101 | - .0176 | - .0549 | - .1193 | - .1983 | - .2444 | - .2826 | .2302   | .1892 |
| 40.000  | - .0101 | - .0474 | - .0474 | - .1039 | - .1980 | - .2032 | - .3276 | .0865   | .0629 |
| 70.000  | .0139   | .0139   | .1494   | .2716   | .0745   | .0301   | - .0714 |         |       |
| 10.000  | .0700   | .0473   | .2245   | .2739   | .0937   | .0030   | - .0859 |         |       |
| 105.000 |         | .3088   | .3088   | .1893   | - .0602 | - .1221 | - .1520 |         |       |
| 110.000 |         |         |         |         |         |         |         | - .3016 |       |
| 120.000 | .0577   | .1265   | .3201   | .0456   | - .1500 | - .2347 | - .2620 | - .2969 |       |
| 135.000 |         |         | .4098   | .4270   | - .0424 | - .1112 | - .1503 |         |       |
| 150.000 | .0183   | .1396   | .4368   | .4608   | .0662   | - .0595 | - .1276 |         |       |
| 165.000 | .0095   |         | .4416   |         | .2848   | .0360   | - .3687 |         |       |
| 180.000 | .0059   | .1161   | .4599   | .5086   |         |         |         |         |       |

ALPHA ( 2 ) = -.032      BETA ( 1 ) = -3.867      MACH = 1.2476      Q = 600.19      P = 550.67      RM/L = 3.0137

SECTION (1) ORBITER FUSELAGE

**DEPENDENT VARIABLE CP**

[illegible]

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|        |       |       |       |       |       |        |        |        |        |        |        |
|--------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| 1.4133 | .7614 | .3029 | .1627 | .0812 | .0045 | .0180  | .0255  | .0274  | -.0092 | -.0236 | -.0020 |
|        |       | .3400 | .1812 | .0692 | .0045 | .0183  | -.0198 |        |        |        |        |
|        |       | .5097 | .2380 | .1397 | .0470 | .0199  | -.0763 | -.0767 | -.0669 | -.0214 | -.0438 |
|        |       | .6287 | .3729 | .2814 | .1925 | .1680  | .0923  |        |        |        |        |
|        |       | .6837 | .4332 | .3238 | .2755 | .2316  | .1254  | -.2517 | -.0988 | -.0792 | -.0304 |
| .8986  |       | .7194 | .4804 | .3413 | .3203 | .2764  | .0704  | -.2305 | -.1988 | -.1210 | -.0341 |
|        |       | .7352 | .5431 | .4023 | .4717 | .5061  | .0860  | -.1792 | -.4110 | -.1573 | -.0861 |
|        |       |       |       |       |       |        | .0312  |        |        |        |        |
|        |       |       |       |       |       | .9003  | -.2260 | -.4527 | -.3034 | -.1682 | -.0693 |
|        |       | .6815 | .5355 | .4071 | .5207 |        | .6324  |        |        |        |        |
|        |       |       |       |       |       |        | .6777  |        |        |        |        |
|        |       |       |       |       |       |        |        | -.3176 | -.3977 | -.2998 | -.1814 |
|        |       |       |       |       |       | .9439  |        |        |        |        |        |
|        |       |       |       |       |       | 1.0078 |        |        |        |        |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XE8834)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = -.032 BETA ( 1 ) = -3.857

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

180.000 1.4133 .8818 .6065 .5021 .3979 .5164 .8680 -.4196 -.4237 -.2434 -.2036 -.0801

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .0192 .0199 .0128 .0470 -.1195 -.1767 -.2224 .2812 .2400

40.000 -.0164 -.0086 -.0086 -.0435 -.1349 -.1035 -.2912 .1531 .1081

70.000 .0095 -.1035 -.1035 -.1756 -.0760 -.0207 -.0118

90.000 .0329 -.0369 -.0486 .1495 .0498 -.0482 -.0715

110.000 .1614 .1893 -.0190 -.1162 -.1573

120.000 .0016 -.0156 .3316 .2210 -.0447 -.1221 -.1235 -.2356

135.000 .3877 .3877 .3664 -.0207 -.0323 -.0444 -.2462

150.000 .0088 .0482 .3739 .3665 .0531 .0578 -.0077

165.000 .0067 .3684 .3684 .3681 .1650 -.3213

180.000 .0028 .1029 .3584 .3622

ALPHA ( 2 ) = -.029 BETA ( 2 ) = .184 MACH = 1.2476 Q = 600.19 P = 550.87 RN/L = 3.0137

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.4178 .7595 .3053 .1552 .1070 .0187 .0140 .0416 .0350 -.0021 -.0301 -.0579 -.0542

20.000 .3230 .3230 .4481 .1999 .1197 .0443 .0298 .0091 -.0288 -.0446 -.0256 -.0671 -.0320

40.000 .5314 .5314 .2849 .2048 .2048 .1260 .1317 .0532 .0532 .0494 .0256 -.0671 -.0320

60.000 .5729 .5729 .3247 .2319 .2319 .1813 .1789 .0673 .0673 .0494 .0256 -.0671 -.0320

80.000 .7595 .7595 .6120 .3675 .2374 .2295 .2098 .0166 .0166 .0494 .0256 -.0671 -.0320

100.000 .6480 .6480 .4624 .4624 .3124 .4058 .4199 .0194 .0194 .0494 .0256 -.0671 -.0320

120.000 .6407 .6407 .5125 .3729 .4945 .8231 .8231 .01073 .01073 .0494 .0256 -.0671 -.0320

140.000 .5507 .5507 .6213 .6213 .9182 .9182 .01073 .01073 .0494 .0256 -.0671 -.0320

160.000 .9947 .9947 .9947 .9947 .9947 .9947 .9947 .01073 .01073 .0494 .0256 -.0671 -.0320

180.000 .9947 .9947 .9947 .9947 .9947 .9947 .9947 .01073 .01073 .0494 .0256 -.0671 -.0320

PHI

.000 .0169 .0207 .0136 -.0422 -.1189 -.1726 -.2158 .3013 .2552

40.000 .0054 .0096 -.0307 -.1297 -.1217 -.2680 .1384 .0597

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB834)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = -.029 BETA ( 2 ) = .184

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

|         |        |        |        |       |        |        |        |
|---------|--------|--------|--------|-------|--------|--------|--------|
| 70.000  | -.0040 | -.1123 | -.1241 | .1708 | .0261  | -.0676 | -.0701 |
| 90.000  | .0235  | -.0462 | .0789  | .1296 | -.0161 | -.0856 | -.1122 |
| 105.000 |        |        | .2100  | .1257 | -.0912 | -.1578 | -.1873 |
| 110.000 |        |        |        |       |        |        | -.2920 |
| 120.000 | .0307  | .0323  | .2941  | .1768 | -.0778 | -.1794 | -.2184 |
| 135.000 |        |        | .3240  | .3787 | .0060  | -.0887 | -.1222 |
| 150.000 | .0282  | .0789  | .3446  | .3908 | .0683  | -.0148 | -.0966 |
| 165.000 | .0183  |        | .3639  |       | .0920  | .0627  | -.3309 |
| 180.000 | .0174  | .0832  | .3801  | .4785 |        |        |        |

ALPHA ( 2 ) = -.035 BETA ( 3 ) = .4251 MACH = 1.2476 Q = 600.19 P = 550.87 RN/L = 3.0137

SECTION ( 1 ) ORBITER FUSELAGE

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

|         |        |       |       |       |       |        |        |        |        |        |        |        |        |
|---------|--------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| .000    | 1.4075 | .7487 | .2990 | .1592 | .1107 |        | -.0020 | .0198  | .0200  | .0018  | -.0263 | -.0614 | -.0624 |
| 20.000  |        |       | .2990 | .1418 | .0803 | -.0011 | .0093  | .0125  |        |        |        |        |        |
| 40.000  |        |       | .3783 | .1015 | .0140 |        | .0951  | -.0139 | -.0241 | -.0492 | -.0341 | -.0794 | -.0367 |
| 55.000  |        |       | .4777 | .1967 | .1132 | .0529  | .0951  | .0193  |        |        |        |        |        |
| 70.000  |        |       | .4740 | .2200 | .1463 | .0925  | .1187  | .0160  | -.3520 | -.2232 | -.1734 | -.0501 |        |
| 90.000  | .6118  |       | .5106 | .2599 | .1458 | .1194  | .1382  | -.1032 | -.3810 | -.3290 | -.1668 | -.0444 |        |
| 120.000 |        |       | .5651 | .3754 | .2207 | .3192  | .3145  | -.1254 | -.3577 | -.5308 | -.1711 | -.0512 |        |
| 140.000 |        |       | .5939 | .4753 | .3329 | .4373  | .7486  | -.3093 | -.4361 | -.2654 | -.2269 | -.0621 |        |
| 150.000 |        |       |       |       |       |        | .4524  |        |        |        |        |        |        |
| 151.000 |        |       |       |       |       |        | .5436  |        |        |        |        |        |        |
| 162.000 |        |       |       |       |       |        |        | -.3331 | -.4734 | -.2255 | -.2232 | -.0654 |        |
| 165.000 |        |       |       |       |       |        |        |        |        |        |        |        |        |
| 169.000 |        |       |       |       |       |        |        |        |        |        |        |        |        |
| 174.000 |        |       |       |       |       |        |        |        |        |        |        |        |        |
| 180.000 | 1.4075 | .8527 | .6248 | .5107 | .4004 | .5082  | .8733  | -.4363 | -.4108 | -.2345 | -.2012 | -.0803 |        |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |

PHI

|         |        |        |        |        |        |        |        |
|---------|--------|--------|--------|--------|--------|--------|--------|
| .000    | .0025  | .0258  | .0098  | -.0462 | -.1208 | -.1728 | -.2010 |
| 40.000  | .0289  |        | .0211  | -.0310 | -.1281 | -.1367 | -.2497 |
| 70.000  | -.0072 | -.1149 | -.0538 | .1653  | -.0017 | -.1086 | -.1269 |
| 90.000  | .0249  | -.0513 | .0833  | .1261  | -.0691 | -.1300 | -.1568 |
| 105.000 |        |        | .2022  | .1185  | -.1427 | -.1984 | -.2265 |
| 110.000 |        |        |        |        |        |        | -.3374 |
| 120.000 | .0370  | .0422  | .2462  | .0290  | -.1662 | -.2843 | -.3192 |
| 135.000 |        |        | .4795  | .3250  | -.0731 | -.1646 | -.2107 |
| 150.000 | .0171  | .0154  | .2455  | .2423  | .0242  | -.0366 | -.1809 |



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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A'S 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8834)

ALPHA ( 3 ) = 3.924 BETA ( 2 ) = .180 MACH = 1.2463 Q = 599.48 P = 551.33 RW/L = 3.0145

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000   | 1.4059 | .8876 | .4221 | .2777 | .1851 |       | .0538 | .0697  | .0757  | .0495  | .0289  | -.0041 | -.0101 |       |
| 20.000  |        |        |       | .4408 | .2769 | .1617 |       | .0637 | .0577  | .0447  | .0138  | .0332  | -.0204 | -.0079 |       |
| 40.000  |        |        |       | .5337 | .3057 | .2075 |       | .1105 | .0598  |        |        |        |        |        |       |
| 55.000  |        |        |       | .5762 | .3458 | .2512 |       | .1813 | .1057  |        |        |        |        |        |       |
| 70.000  |        |        |       | .5809 | .3451 | .2386 |       | .2006 | .1139  |        | -.2656 | -.1509 | -.1318 | -.1096 |       |
| 90.000  |        | .7243  |       | .5892 | .3590 | .2283 |       | .2368 | .0459  |        | -.2749 | -.2059 | -.1863 | -.1039 |       |
| 120.000 |        |        |       | .5795 | .3999 | .2443 |       | .4374 | .0057  |        | -.2692 | -.4615 | -.2213 | -.1081 |       |
| 140.000 |        |        |       |       |       |       |       |       | -.0841 |        | -.5133 | -.3709 | -.1858 | -.0587 |       |
| 150.000 |        |        |       | .5379 | .4225 | .2509 |       | .7934 | -.3276 |        |        |        |        |        |       |
| 151.000 |        |        |       |       |       |       |       | .5358 |        |        |        |        |        |        |       |
| 162.000 |        |        |       |       |       |       |       | .5955 |        |        |        |        |        |        |       |
| 165.000 |        |        |       |       |       |       |       |       | -.3703 |        | -.4401 | -.2944 | -.2125 | -.0471 |       |
| 169.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 174.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 180.000 | 1.4059 | .7319  | .5048 | .4062 | .2842 | .4223 | .9376 | .8630 | -.5136 | -.5134 | -.2626 | -.2264 | -.0455 |        |       |

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     | .000   | .0353  | .0823  | .0590  | .0372  | -.0358 | -.0954 | -.1388 | .3930  | .3164  |
| 40.000  |        | .0641  |        | .0995  | .0540  | -.0505 | -.0606 | -.1869 | .2298  | .1628  |
| 70.000  |        | -.0708 | -.1880 | -.2460 | .0062  | -.0603 | -.1374 | -.1082 |        |        |
| 90.000  |        | -.0266 | -.1313 | -.0607 | .0320  | -.0999 | -.1493 | -.1911 |        |        |
| 105.000 |        |        |        | .1209  | .0672  | -.2068 | -.2141 | -.2479 |        |        |
| 110.000 |        |        |        |        |        |        |        |        | -.3583 |        |
| 120.000 | -.0181 | -.0330 | .2135  | .1020  | -.1112 | -.2563 | -.2603 | -.3228 |        |        |
| 135.000 |        |        | .2320  | .2918  | -.0409 | -.1467 | -.1952 |        |        |        |
| 150.000 | .0112  | .0317  | .2436  | .4036  | .0254  | -.0701 | -.1532 |        |        |        |
| 165.000 | .0126  |        | .2599  |        | .2305  | .0058  | -.3394 |        |        |        |
| 180.000 | .0103  | .0374  | .2787  | .4441  |        |        |        |        |        |        |

ALPHA ( 3 ) = 3.934 BETA ( 3 ) = 4.244 MACH = 1.2463 Q = 599.48 P = 551.33 RW/L = 3.0145

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040 | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|--------|-------|-------|-------|-------|-------|-------|--------|-------|--------|--------|--------|--------|-------|
| PHI     | .000  | 1.3939 | .8758 | .4129 | .2831 | .1872 |       | .0467 | .0499  | .0591 | .0520  | .0297  | -.0094 | -.0198 |       |
| 20.000  |       |        |       | .4049 | .2603 | .1481 |       | .0415 | .0423  | .0440 | .0092  | .0104  | -.0394 | -.0285 |       |
| 40.000  |       |        |       | .4519 | .2574 | .1723 |       | .0766 | .0702  |       |        |        |        |        |       |
| 55.000  |       |        |       | .4689 | .2520 | .1815 |       | .1200 | .0702  |       |        |        |        |        |       |
| 70.000  |       |        |       | .4717 | .2423 | .1615 |       | .1379 | .0622  |       | -.3048 | -.2022 | -.1822 | -.1049 |       |
| 90.000  |       | .5767  |       | .4889 | .2598 | .1495 |       | .1726 | -.0301 |       | -.3259 | -.2611 | -.2187 | -.0945 |       |
| 120.000 |       |        |       | .5019 | .3272 | .1688 |       | .3424 | -.0915 |       | -.3445 | -.5107 | -.1671 | -.0674 |       |

DATE 10 FEB 76 TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
 AMES 11-07310A148) -130A/B/C/R ORB FUSELAGE  
 (XEBB34)

ALPHA ( 3 ) = 3.934 BETA ( 3 ) = 4.244

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE: CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 140.000 |        |       |       |       |       |       |       | .7241 |        | -.2607 | -.5003 | -.3231 | -.2116 | -.0509 |       |
| 150.000 |        |       |       |       |       |       |       |       | .4419  | -.3986 |        |        |        |        |       |
| 151.000 |        |       |       |       |       |       |       |       | .5173  |        |        |        |        |        |       |
| 162.000 |        |       |       |       |       |       |       |       |        | -.3775 | -.5126 | -.2705 | -.2375 | -.0549 |       |
| 165.000 |        |       |       |       |       |       |       | .8344 |        |        |        |        |        |        |       |
| 169.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 174.000 |        |       |       |       |       |       |       | .8917 |        | -.4869 | -.4568 | -.2788 | -.2227 | -.0648 |       |
| 180.000 | 1.3939 | .7115 | .5040 | .4153 | .2786 | .3997 | .9600 | .9990 | 1.0180 | 1.0450 |        |        |        |        |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 |       |        |        |        |        |        |        |       |

|         |        |        |        |        |        |        |        |        |       |       |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--|--|--|--|--|
| PHI     |        |        |        |        |        |        |        |        |       |       |  |  |  |  |  |
| .000    | .0200  | .0815  | .0914  | .0395  | -.0367 | -.0937 | -.1208 |        | .3891 | .3210 |  |  |  |  |  |
| 40.000  | .0660  | .1075  | .1075  | .0542  | -.0538 | -.0684 | -.1847 |        | .2336 | .1622 |  |  |  |  |  |
| 70.000  | -.0651 | -.1974 | -.2051 | .0239  | -.0758 | -.1635 | -.1596 |        |       |       |  |  |  |  |  |
| 90.000  | -.0217 | -.1278 | -.0116 | .0140  | -.1308 | -.1785 | -.2142 |        |       |       |  |  |  |  |  |
| 105.000 |        |        | .1111  | .0270  | -.2616 | -.2557 | -.2741 |        |       |       |  |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        | -.3828 |       |       |  |  |  |  |  |
| 120.000 | .0157  | -.0153 | .1667  | -.0223 | -.1855 | -.3325 | -.4157 | -.3523 |       |       |  |  |  |  |  |
| 135.000 |        |        | .2512  | .2406  | -.1316 | -.2085 | -.2555 |        |       |       |  |  |  |  |  |
| 150.000 | .0134  | .0582  | .2679  | .2391  | -.0476 | -.1450 | -.2192 |        |       |       |  |  |  |  |  |
| 165.000 | .0028  |        | .2670  |        | .1872  | -.0500 | -.3526 |        |       |       |  |  |  |  |  |
| 180.000 | -.0084 | .1014  | .2721  | .3064  |        |        |        |        |       |       |  |  |  |  |  |

ALPHA ( 4 ) = 7.988 BETA ( 1 ) = -3.866 MACH = 1.2474 Q = 600.07 P = 550.87 RW/L = 3.0135

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE: CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| .000    | 1.3694 | 1.0048 | .5451 | .3812 | .2569 |       |       | .1169 | .0962  | .0930  | .1001  | .0929  | .0956  | .0532  | .0459 |
| 20.000  |        |        | .5925 | .3962 | .2222 | .1690 |       | .1209 | .1197  | .1197  | .1298  | .0900  | .1175  | .0515  | .0709 |
| 40.000  |        |        | .6980 | .4534 | .3250 | .2248 |       | .1847 | .1825  | .1825  |        |        |        |        |       |
| 55.000  |        |        | .7150 | .4840 | .3553 | .2415 |       | .2309 | .1981  | .1981  | -.1770 | -.0605 | -.0619 | -.1503 |       |
| 70.000  |        |        | .6848 | .4569 | .3287 | .2394 |       | .2497 | .1683  | .1683  | -.1980 | -.0989 | -.1269 | -.1779 |       |
| 90.000  |        | .8084  | .6517 | .4383 | .3099 | .2396 |       | .2947 | .1114  | .1114  | -.2065 | -.4039 | -.4315 | -.2531 |       |
| 120.000 |        |        | .5698 | .3865 | .2595 | .2495 |       | .4974 | .0265  | .0265  | -.2006 | -.4777 | -.2295 | -.1144 |       |
| 140.000 |        |        | .4554 | .3356 | .1808 | .2323 |       | .8549 | .5975  |        |        |        |        |        |       |
| 150.000 |        |        |       |       |       |       |       | .6248 |        |        |        |        |        |        |       |
| 162.000 |        |        |       |       |       |       |       |       | -.4189 | -.5162 | -.4077 | -.2149 | -.0823 |        |       |
| 165.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 169.000 |        |        |       |       |       |       |       | .8789 |        |        |        |        |        |        |       |
| 174.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |        |       |

.8295

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TABULATED PRESSURE DATA - 0A148 ( AVES 11-073-1 )

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AVES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8834)

ALPHA ( 4 ) = 7.988 BETA ( 1 ) = -3.866

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | 0.000  | 0.080  | 0.230  | 0.460  | 0.700  | 1.120  | 1.580  | 1.660  | 1.770  | 2.040  | 2.510  | 3.010  | 3.780  | 4.970  | 5.740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 180.000 | 1.3694 | .6017  | .3704  | .3186  | .1744  | .2299  |        | .7949  |        | -.5131 | -.5044 | -.3210 | -.2245 | -.0635 |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 40.000  | .1126  | .1416  | .1769  | .1292  | .0516  | -.0174 | -.0696 |        | .4935  | .3807  |        |        |        |        |       |
| 70.000  | .1390  | .1769  | .1375  | .1375  | .0320  | .0140  | -.1374 |        | .3304  | .2321  |        |        |        |        |       |
| 90.000  | -.1394 | -.2570 | -.3244 | -.1447 | -.0851 | -.1213 | -.0360 |        |        |        |        |        |        |        |       |
| 105.000 | -.0955 | -.2023 | -.2759 | -.0216 | -.1673 | -.1668 | -.1254 |        |        |        |        |        |        |        |       |
| 110.000 |        |        | -.0624 | .0423  | -.2174 | -.2974 | -.2056 |        |        |        |        |        |        |        |       |
| 120.000 | -.1746 | -.1614 | .1049  | .0773  | -.1127 | -.2445 | -.2811 | -.2675 |        |        |        |        |        |        |       |
| 135.000 |        |        | .0916  | .1681  | -.0836 | -.1497 | -.1780 | -.2559 |        |        |        |        |        |        |       |
| 150.000 | -.0746 | -.0387 | .0856  | .2098  | .0228  | -.0485 | -.1497 |        |        |        |        |        |        |        |       |
| 165.000 | -.0380 |        | .1196  |        | .2515  | .0588  | -.3694 |        |        |        |        |        |        |        |       |
| 180.000 | -.0339 | -.0002 | .1846  | .4268  |        |        |        |        |        |        |        |        |        |        |       |

ALPHA ( 4 ) = 7.987 BETA ( 2 ) = .186 MACH = 1.2474

Q

P

R/VL

3.0135

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | 0.000  | 0.080  | 0.230 | 0.460 | 0.700 | 1.120  | 1.580  | 1.660 | 1.770  | 2.040  | 2.510  | 3.010  | 3.780  | 4.970  | 5.740 |
|---------|--------|--------|-------|-------|-------|--------|--------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |       |       |       |        |        |       |        |        |        |        |        |        |       |
| 20.000  | 1.3752 | 1.0062 | .5425 | .3868 | .2747 |        |        | .1181 |        | .1086  | .1045  | .1040  | .0891  | .0521  | .0323 |
| 40.000  |        |        | .5569 | .3831 | .2435 | .1532  |        | .1188 |        | .0941  |        |        |        |        |       |
| 55.000  |        |        | .6147 | .3936 | .2603 | .1842  |        | .1495 |        | .1052  | .1132  | .0757  | .0856  | .0391  | .0316 |
| 70.000  |        |        | .6000 | .3917 | .2775 | .1584  |        | .1639 |        | .1297  |        |        |        |        |       |
| 90.000  |        |        | .5687 | .3518 | .2402 | .1535  |        | .1955 |        | .1425  | -.2177 | -.1361 | -.1281 | -.2000 |       |
| 100.000 | .6706  |        | .5481 | .3421 | .2183 | .1554  |        | .2405 |        | .0952  | -.2470 | -.1729 | -.1661 | -.1669 |       |
| 120.000 |        |        | .5012 | .3355 | .1943 | .1995  |        | .4414 |        | .0266  | -.2667 | -.4519 | -.3673 | -.1679 |       |
| 140.000 |        |        | .4355 | .3378 | .1556 | .2219  |        | .7638 |        | -.0758 | -.5553 | -.4234 | -.1949 | -.0695 |       |
| 151.000 |        |        |       |       |       |        |        |       | .5263  |        |        |        |        |        |       |
| 162.000 |        |        |       |       |       |        |        |       | .5706  |        |        |        |        |        |       |
| 165.000 |        |        |       |       |       |        |        | .8319 |        | -.4115 | -.4821 | -.3314 | -.2067 | -.0485 |       |
| 169.000 |        |        |       |       |       |        |        |       |        |        |        |        |        |        |       |
| 174.000 |        |        |       |       |       |        |        | .8208 |        |        |        |        |        |        |       |
| 180.000 | 1.3752 | .5892  | .3865 | .3230 | .1837 | .2499  | .8696  | .8208 |        | -.5482 | -.5501 | -.2991 | -.2180 | -.0431 |       |
| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790 | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |        |       |       |       |        |        |       |        |        |        |        |        |        |       |
| 40.000  | .0903  | .1506  | .1926 | .1347 | .0539 | -.0139 | -.0535 |       | .4932  | .3769  |        |        |        |        |       |
| 1167    |        |        | .2063 | .1479 | .0310 | .0031  | -.1335 |       | .3311  | .2295  |        |        |        |        |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB834)

ALPHA ( 4 ) = 7.987 BETA ( 2 ) = .186

SECTION ( 1 ) ORBITTER FUSELAGE DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI  
 70.000 -.1346 -.2493 -.3154 -.0972 -.1106 -.1835 -.1195  
 90.000 -.0764 -.1926 -.2589 -.0087 -.2255 -.2002 -.2262  
 105.000 -.0303 -.0615 -.0615 -.2692 -.3118 -.2837  
 110.000 -.0591 -.0831 .1142 .0431 -.1591 -.2848 -.3566  
 120.000 .1169 .1169 .1169 .2435 -.0834 -.1925 -.2435  
 135.000 -.0181 -.0337 .1679 .4439 -.0200 -.1208 -.1931  
 150.000 -.0111 .2013 .2013 .1773 -.0583 -.3548  
 165.000 -.0101 .0006 .2302 .4710

ALPHA ( 4 ) = 7.988 BETA ( 3 ) = 4.237 MACH = 1.2474 Q = 600.07 P = 550.87 RN/L = 3.0135

SECTION ( 1 ) ORBITTER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI  
 20.000 1.3624 .9968 .5385 .3854 .2716 .1240 .1050 .0923 .0925 .1029 .0900 .0509 .0417  
 40.000 .5211 .3540 .2264 .2264 .1274 .1024 .0929 .0697 .0688 .0629 .0624 .0092 .0323  
 60.000 .5253 .3368 .2356 .2356 .2003 .0713 .0783 .0970 .0970 .1048 .1811 .2053  
 80.000 .4900 .2812 .2003 .2003 .1628 .0727 .1367 .0317 .2538 .2256 .2305 .1610  
 100.000 .4627 .2473 .1628 .1628 .0701 .1860 .0317 .2538 .2256 .2305 .1610  
 120.000 .4558 .2469 .1468 .1468 .1346 .3677 .0536 .3304 .4897 .2220 .0973  
 140.000 .4363 .2728 .1395 .1395 .1824 .7051 .1826 .3588 .3588 .1869 .0465  
 160.000 .3990 .3149 .1275 .1275 .8360 .8021 .4181 .5323 .3033 .2225 .0451  
 180.000 .3910 .3340 .1765 .1765 .2123 .8217 .5273 .4900 .3122 .2281 .0595

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI  
 70.000 .0829 .1513 .1855 .1316 .0519 -.0106 -.0518  
 90.000 .1031 .2088 .2088 .1458 .0326 -.0125 -.1361  
 110.000 .1143 .2858 .3101 .0952 .1438 .2434 .1832  
 130.000 .0519 .1816 .1347 .0424 .2242 .1943 .2785  
 150.000 .0299 .0299 .0064 .3534 .3128 .3196  
 170.000 .0894 .0894 .0929 .2103 .3537 .4551  
 190.000 .1947 .2464 .2464 .1431 .2373 .2856  
 210.000 .2335 .3392 .3392 .0900 .2007 .2561

C-7

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AWCS 11-073(0A148) -14CA/B/C/R ORB FUSELAGE (XE8834)

ALPHA ( 4 ) = 7.988 BETA ( 3 ) = 4.257

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI 165.000 -.0148 .1866 .1239 -.1292 -.3664

180.000 -.0379 .0094 .3939

ALPHA ( 5 ) = 11.921 BETA ( 1 ) = -3.850 MACH = 1.2455 Q = 599.75 P = 552.28 RN/L = 3.0144

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1860 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI .000 1.3192 1.1143 .6637 .4803 .3604 .2354 .2015 .1639 .1440 .1300 .1663 .1206 .1305

20.000 .7098 .7763 .5487 .4122 .3008 .2488 .1982 .1722 .2092 -.1233 -.0483 -.0577 -.1521

40.000 .5117 .3563 .5117 .3563 .2410 .1932 .1953 -.1690 -.0728 -.1201 -.1921

55.000 .6616 .6010 .4034 .2794 .2024 .2358 .2358 .1227 -.2037 -.3813 -.5953 -.4404

70.000 .7508 .4750 .2945 .1763 .1400 .8392 .0337 -.1141 -.5935 -.5325 -.2718 -.1551

120.000 .3372 .2307 .1151 .1400 .5812 .5977

140.000 .1510 .1510 .8469

151.000 .1510 .7613

162.000 .2524 .2356 .0974 .1271 .7846

165.000 .4609 .2356 .0974 .1271 .7846

174.000 .13192 .4609 .2356 .0974 .1271 .7846

180.000 .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI .000 .1884 .2671 .2868 .2142 .1236 .0368 -.0017

40.000 .2214 .3118 .3118 .2310 .0915 .0649 -.0933

70.000 .2545 .3808 .4134 .2096 .1341 .1178 -.0901

90.000 .1686 .2835 .3573 .0852 .2326 .1453 -.1608

105.000 .2877 .0144 .2634 .2982 .2074

110.000 .1897 .2067 .0062 .0592 .1765 .2685 .2669

120.000 .0000 .1774 .1395 .1778 .2114

135.000 .1076 .2100 .0430 .3086 .1747 .2534

150.000 .0687 .0500 .1812 .0191 .3902

165.000 .0486 .0757 .4448

180.000 .0486 .0757 .4448

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

(XEB834)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 5 ) = 11.932 BETA ( 2 ) = .189 MACH = 1.2455 Q = 599.75 P = 552.28 RN/L = 3.0144

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|
| PHI     |        |        |       |       |       |       |       |       |        |        |       |       |       |       |       |
| .000    | 1.3244 | 1.1190 | .6700 | .4901 | .3699 | .2255 | .2007 | .1750 | .1349  | .1588  | .1610 | .1285 | .1332 |       |       |
| 20.000  |        |        | .6808 | .4849 | .3445 | .2407 | .1977 | .1573 |        |        |       | .1094 | .1346 |       |       |
| 40.000  |        |        | .6884 | .4800 | .3645 | .2517 | .2022 | .1207 |        |        |       |       |       |       |       |
| 55.000  |        |        | .6155 | .4003 | .2922 | .1517 | .1183 | .1165 |        |        |       |       |       |       |       |
| 70.000  |        |        | .5448 | .3424 | .2302 | .1522 | .1244 | .1584 |        |        |       |       |       |       |       |
| 90.000  |        | .6098  | .5020 | .3113 | .2015 | .1246 | .1963 | .1360 |        |        |       |       |       |       |       |
| 120.000 |        |        | .4121 | .2528 | .1371 | .1322 | .4272 | .0499 |        |        |       |       |       |       |       |
| 140.000 |        |        |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 150.000 |        |        | .3210 | .2495 | .0973 | .1319 | .7464 |       |        |        |       |       |       |       |       |
| 162.000 |        |        |       |       |       |       |       | .5210 |        |        |       |       |       |       |       |
| 165.000 |        |        |       |       |       |       |       | .5508 |        |        |       |       |       |       |       |
| 169.000 |        |        |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 174.000 |        |        |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 180.000 | 1.3244 | .4458  | .2667 | .2422 | .1133 | .1357 | .7824 |       |        |        |       |       |       |       |       |
| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790 | .9210 | .9500 | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |

| PHI     | .000   | .3048  | .2979  | .2187  | .1261  | .0527  | .0019  |
|---------|--------|--------|--------|--------|--------|--------|--------|
| .000    | 1.860  | .3048  | .2979  | .2187  | .1261  | .0527  | .0019  |
| 40.000  | .2058  |        | .3192  | .2336  | .1011  | .0539  | -.0887 |
| 70.000  | -.2341 | -.3772 | -.4213 | -.2008 | -.2469 | -.1074 | -.1074 |
| 90.000  | -.1358 | -.2551 | -.3404 | -.1003 | -.2976 | -.2268 | -.2740 |
| 105.000 |        |        | -.1892 | .0004  | -.3452 | -.4120 | -.3037 |
| 110.000 |        |        |        |        |        |        | -.3494 |
| 120.000 | -.0861 | -.1300 | .0257  | -.0266 | -.2041 | -.3064 | -.3811 |
| 135.000 |        |        | .0365  | .1586  | -.1361 | -.2269 | -.2860 |
| 150.000 | -.0604 | -.0320 | .0295  | .4201  | -.0666 | -.1697 | -.2225 |
| 165.000 | -.0366 |        | .3684  |        | .1638  | -.1020 | -.3822 |
| 180.000 | -.0318 | -.0211 | .1059  | .4626  |        |        |        |

ALPHA ( 5 ) = 11.924 BETA ( 3 ) = 4.253 MACH = 1.2455 Q = 599.75 P = 552.28 RN/L = 3.0144

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660  | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |        |        |       |       |       |       |       |        |       |       |       |       |       |       |       |
| .000    | 1.3108 | 1.1014 | .6563 | .4855 | .3557 | .1953 | .1862 | .1536  | .1380 | .1491 | .1701 | .1219 | .1297 |       |       |
| 20.000  |        |        | .6311 | .4456 | .3086 | .1675 | .1645 | .1210  |       |       |       |       |       |       |       |
| 40.000  |        |        | .5850 | .4024 | .2313 | .1675 | .1366 | .0504  |       |       |       |       |       |       |       |
| 55.000  |        |        | .4894 | .2840 | .1932 | .1044 | .0371 | .0534  |       |       |       |       |       |       |       |
| 70.000  |        |        | .4316 | .2300 | .1470 | .0706 | .0661 | .1130  |       |       |       |       |       |       |       |
| 90.000  |        | .4630  | .4077 | .2095 | .1255 | .0496 | .1746 | .0773  |       |       |       |       |       |       |       |
| 120.000 |        |        | .3525 | .1963 | .0953 | .0845 | .3783 | -.0217 |       |       |       |       |       |       |       |



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

(XE8835) ( 05 AUG 75 )

## REFERENCE DATA

|       |   |           |        |      |   |           |        |
|-------|---|-----------|--------|------|---|-----------|--------|
| SREF  | = | 2690.0000 | 50.FT. | XMRP | = | 1076.6800 | IN. X0 |
| LREF  | = | 474.8000  | IN.    | YMRP | = | .0000     | IN. Y0 |
| BREF  | = | 936.0630  | IN.    | ZMRP | = | 375.0000  | IN. Z0 |
| SCALE | = | .0300     |        |      |   |           |        |

|        |   |        |        |   |        |
|--------|---|--------|--------|---|--------|
| RUDDER | = | 10.000 | SPOBRK | = | 35.000 |
| BDFLAP | = | 16.300 | L-ELVN | = | .000   |
| R-ELVN | = | 10.000 | MACH   | = | 1.100  |

## PARAMETRIC DATA

ALPHA ( 1 ) = -4.064      BETA ( 1 ) = -3.846      MACH = 1.1012      Q = 599.90      P = 706.74      RN/L = 3.1771

## SECTION ( ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X\LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| PM1     |        |       |       |       |        |        |       |        |        |        |        |        |        |        |        |
| .000    | 1.3165 | .5497 | .1316 | .0702 | .0055  |        |       | -.0180 | -.0847 | -.1096 | -.0885 | -.1433 | -.1284 | -.1040 | -.0176 |
| 20.000  |        |       | .1616 | .0573 | -.0384 | -.0530 |       | -.0695 | -.1096 |        |        |        |        |        |        |
| 40.000  |        |       | .3473 | .0844 | -.0084 | -.0733 |       | -.1594 | -.2510 | -.2406 | -.2023 | -.1589 | -.1497 | -.0461 |        |
| 55.000  |        |       | .5158 | .2702 | .1859  | .0936  |       | .0215  | -.0635 |        |        |        |        |        |        |
| 70.000  |        |       | .6249 | .3896 | .2011  | .2460  |       | .1220  | -.0172 | -.3998 | -.1782 | -.0837 | -.0082 |        |        |
| 90.000  |        | .8804 | .7041 | .4723 | .3665  | .2957  |       | .1542  | -.0833 | -.3547 | -.3272 | -.0997 | -.0155 |        |        |
| 120.000 |        |       | .7828 | .6080 | .4869  | .4938  |       | .4008  | -.0175 | -.2891 | -.5421 | -.1088 | -.0403 |        |        |
| 140.000 |        |       |       |       |        |        |       |        | -.0252 |        |        |        |        |        |        |
| 150.000 |        |       | .7809 | .6457 | .5486  | .5825  |       | .8333  | -.2928 | -.5160 | -.3283 | -.1648 | -.0414 |        |        |
| 151.000 |        |       |       |       |        |        |       |        | .5467  |        |        |        |        |        |        |
| 162.000 |        |       |       |       |        |        |       |        | .6027  |        |        |        |        |        |        |
| 165.000 |        |       |       |       |        |        |       |        |        | -.4437 | -.4201 | -.2783 | -.1917 | -.0409 |        |
| 169.000 |        |       |       |       |        |        |       | .8865  |        |        |        |        |        |        |        |
| 174.000 |        |       |       |       |        |        | .9799 |        |        |        |        |        |        |        |        |
| 180.000 | 1.3165 | .9740 | .7542 | .6139 | .5361  | .5787  |       | .8169  | -.5651 | -.4386 | -.2304 | -.2267 | -.0388 |        |        |

|      |       |       |       |       |       |       |       |       |        |        |
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| X/18 | .6520 | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|

### III

|         |        |        |        |        |        |        |        |
|---------|--------|--------|--------|--------|--------|--------|--------|
| 0.000   | -.0721 | -.0249 | -.0714 | -.1469 | -.2417 | -.3040 | -.3160 |
| 40.000  | -.0334 |        | -.0796 | -.1363 | -.2539 | -.2613 | -.4417 |
| 70.000  | .1424  | .0635  | .2625  | .3535  | .0805  | -.0106 | .0318  |
| 90.000  | .1634  | .1372  | .3166  | .3619  | .0482  | -.0790 | -.0533 |
| 105.000 |        |        | .3766  | .3821  | -.0416 | -.1247 | -.0912 |
| 110.000 |        |        |        |        |        |        |        |
| 120.000 | .1545  | .2229  | .4803  | .4262  | -.1047 | -.0997 | -.1507 |
| 135.000 |        |        | .5325  | .5496  | -.0229 | .0182  | -.0653 |
| 150.000 | .1766  | .2937  | .5283  | .5201  | .0680  | .0766  | -.0486 |
| 165.000 | .1766  |        | .5088  |        | .3018  | .1277  | -.3783 |
| 180.000 | .1795  | .3024  | .4950  | .5986  |        |        |        |

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(XEB35)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

AIRL 11-073641107

|        | P      | RN/L   |
|--------|--------|--------|
| 706.74 | 538 90 | 3.1771 |

## SECTION ( ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580  | .1770  | .2040  | .2510  | .3310  | .4980  |
|---------|--------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     | 1.3190 | .5468 | .1391 | .0757 | .0195  | -.0456 | -.0126 | -.0506 | -.0879 | -.1420 | -.1260 | -.0937 |
| 20.000  |        |       | .1504 | .0879 | -.0142 | -.0470 | -.0366 | -.0879 | -.1824 | -.1918 | -.1444 | -.1104 |
| 40.000  |        |       | .2940 | .0769 | -.0121 | -.0470 | -.1053 | -.1824 | -.1930 |        |        |        |
| 55.000  |        |       | .4251 | .1968 | .1201  | .0542  | -.0232 | -.1097 |        |        |        |        |
| 70.000  |        |       | .5146 | .2820 | .2053  | .1684  | .0893  | -.0893 | -.4702 | -.2458 | -.1118 | -.0248 |
| 90.000  | .7379  |       | .5888 | .3516 | .2707  | .2017  | .0724  | -.2006 | -.4284 | -.4072 | -.1081 | -.0260 |
| 120.000 |        |       | .6833 | .5057 | .3851  | .4105  | .2923  | -.1581 | -.3956 | -.6204 | -.1500 | -.0294 |
| 140.000 |        |       | .7298 | .6088 | .5090  | .5381  | .7609  | -.2327 | -.5103 | -.2781 | -.2100 | -.0205 |
| 150.000 |        |       |       |       |        |        |        | .4587  |        |        |        |        |
| 151.000 |        |       |       |       |        |        |        | .5308  |        |        |        |        |
| 162.000 |        |       |       |       |        |        |        |        | -.4468 | -.2215 | -.2239 | -.0151 |
| 165.000 |        |       |       |       |        |        |        |        |        |        |        |        |
| 169.000 |        |       |       |       |        |        |        |        |        |        |        |        |
| 174.000 |        |       |       |       |        |        | .9671  |        |        |        |        |        |
| 180.000 | 1.3190 | .9670 | .7350 | .6216 | .5446  | .5956  | .8498  |        | -.4853 | -.2017 | -.2272 | -.0149 |

| X/LB    | .6520 | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0160 | 1.0460 |
|---------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |       |        |        |        |        |        |        |        |        |        |
| .000    | .0659 | -.0326 | -.0816 | -.1640 | -.2354 | -.2930 | -.2810 |        | .2984  | .2303  |
| 40.000  | .0035 |        | -.0821 | -.1454 | -.2439 | -.2592 | -.4216 |        | .1222  | .1004  |
| 70.000  | .1446 | .1222  | .2558  | .3161  | .0356  | -.0734 | -.1078 |        |        |        |
| 90.000  | .1619 | .1798  | .3069  | .3178  | -.0207 | -.1348 | -.1318 |        |        |        |
| 105.000 |       |        | .3701  | .2984  | -.1094 | -.1803 | -.1945 |        |        |        |
| 110.000 | .1787 | .2464  | .4178  | .2660  | -.1825 | -.1914 | -.2455 | -.4101 |        |        |
| 120.000 |       |        | .4933  | .5303  | -.0902 | -.0947 | -.1418 | -.3529 |        |        |
| 135.000 |       | .3100  | .5096  | .5783  |        | -.0374 | -.1257 |        |        |        |
| 150.000 | .1972 |        | .5098  |        | .2162  | .0180  | -.3777 |        |        |        |
| 165.000 | .1968 |        |        |        |        |        |        |        |        |        |
| 180.000 | .1968 | .3212  | .5144  | .6540  |        |        |        |        |        |        |

ALPHA ( 1 ) = -4.062      BETA ( 3 ) = 4.274      MACH = 1.1012      Q = 599.90      P = 100.14      NO. 5

# SECTION 11 ORBITER FUSELAGE

DEPENDENT VARIABLE CP

|  | X/LB | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1770 | .2040 | .2310 | .2580 | .2850 | .3120 | .3390 | .3660 | .3930 | .4200 | .4470 | .4740 | .5010 | .5280 | .5550 | .5820 | .6090 | .6360 | .6630 | .6900 | .7170 | .7440 | .7710 | .7980 | .8250 | .8520 | .8790 | .9060 | .9330 | .9600 | .9870 | 1.0140 | 1.0410 | 1.0680 | 1.0950 | 1.1220 | 1.1490 | 1.1760 | 1.2030 | 1.2300 | 1.2570 | 1.2840 | 1.3110 | 1.3380 | 1.3650 | 1.3920 | 1.4190 | 1.4460 | 1.4730 | 1.5000 | 1.5270 | 1.5540 | 1.5810 | 1.6080 | 1.6350 | 1.6620 | 1.6890 | 1.7160 | 1.7430 | 1.7700 | 1.7970 | 1.8240 | 1.8510 | 1.8780 | 1.9050 | 1.9320 | 1.9590 | 1.9860 | 2.0130 | 2.0400 | 2.0670 | 2.0940 | 2.1210 | 2.1480 | 2.1750 | 2.2020 | 2.2290 | 2.2560 | 2.2830 | 2.3100 | 2.3370 | 2.3640 | 2.3910 | 2.4180 | 2.4450 | 2.4720 | 2.4990 | 2.5260 | 2.5530 | 2.5800 | 2.6070 | 2.6340 | 2.6610 | 2.6880 | 2.7150 | 2.7420 | 2.7690 | 2.7960 | 2.8230 | 2.8500 | 2.8770 | 2.9040 | 2.9310 | 2.9580 | 2.9850 | 3.0120 | 3.0390 | 3.0660 | 3.0930 | 3.1200 | 3.1470 | 3.1740 | 3.2010 | 3.2280 | 3.2550 | 3.2820 | 3.3090 | 3.3360 | 3.3630 | 3.3900 | 3.4170 | 3.4440 | 3.4710 | 3.4980 | 3.5250 | 3.5520 | 3.5790 | 3.6060 | 3.6330 | 3.6600 | 3.6870 | 3.7140 | 3.7410 | 3.7680 | 3.7950 | 3.8220 | 3.8490 | 3.8760 | 3.9030 | 3.9300 | 3.9570 | 3.9840 | 4.0110 | 4.0380 | 4.0650 | 4.0920 | 4.1190 | 4.1460 | 4.1730 | 4.2000 | 4.2270 | 4.2540 | 4.2810 | 4.3080 | 4.3350 | 4.3620 | 4.3890 | 4.4160 | 4.4430 | 4.4700 | 4.4970 | 4.5240 | 4.5510 | 4.5780 | 4.6050 | 4.6320 | 4.6590 | 4.6860 | 4.7130 | 4.7400 | 4.7670 | 4.7940 | 4.8210 | 4.8480 | 4.8750 | 4.9020 | 4.9290 | 4.9560 | 4.9830 | 5.0100 | 5.0370 | 5.0640 | 5.0910 | 5.1180 | 5.1450 | 5.1720 | 5.1990 | 5.2260 | 5.2530 | 5.2800 | 5.3070 | 5.3340 | 5.3610 | 5.3880 | 5.4150 | 5.4420 | 5.4690 | 5.4960 | 5.5230 | 5.5500 | 5.5770 | 5.6040 | 5.6310 | 5.6580 | 5.6850 | 5.7120 | 5.7390 | 5.7660 | 5.7930 | 5.8200 | 5.8470 | 5.8740 | 5.9010 | 5.9280 | 5.9550 | 5.9820 | 6.0090 | 6.0360 | 6.0630 | 6.0900 | 6.1170 | 6.1440 | 6.1710 | 6.1980 | 6.2250 | 6.2520 | 6.2790 | 6.3060 | 6.3330 | 6.3600 | 6.3870 | 6.4140 | 6.4410 | 6.4680 | 6.4950 | 6.5220 | 6.5490 | 6.5760 | 6.6030 | 6.6300 | 6.6570 | 6.6840 | 6.7110 | 6.7380 | 6.7650 | 6.7920 | 6.8190 | 6.8460 | 6.8730 | 6.9000 | 6.9270 | 6.9540 | 6.9810 | 7.0080 | 7.0350 | 7.0620 | 7.0890 | 7.1160 | 7.1430 | 7.1700 | 7.1970 | 7.2240 | 7.2510 | 7.2780 | 7.3050 | 7.3320 | 7.3590 | 7.3860 | 7.4130 | 7.4400 | 7.4670 | 7.4940 | 7.5210 | 7.5480 | 7.5750 | 7.6020 | 7.6290 | 7.6560 | 7.6830 | 7.7100 | 7.7370 | 7.7640 | 7.7910 | 7.8180 | 7.8450 | 7.8720 | 7.8990 | 7.9260 | 7.9530 | 7.9800 | 8.0070 | 8.0340 | 8.0610 | 8.0880 | 8.1150 | 8.1420 | 8.1690 | 8.1960 | 8.2230 | 8.2500 | 8.2770 | 8.3040 | 8.3310 | 8.3580 | 8.3850 | 8.4120 | 8.4390 | 8.4660 | 8.4930 | 8.5200 | 8.5470 | 8.5740 | 8.6010 | 8.6280 | 8.6550 | 8.6820 | 8.7090 | 8.7360 | 8.7630 | 8.7900 | 8.8170 | 8.8440 | 8.8710 | 8.8980 | 8.9250 | 8.9520 | 8.9790 | 9.0060 | 9.0330 | 9.0600 | 9.0870 | 9.1140 | 9.1410 | 9.1680 | 9.1950 | 9.2220 | 9.2490 | 9.2760 | 9.3030 | 9.3300 | 9.3570 | 9.3840 | 9.4110 | 9.4380 | 9.4650 | 9.4920 | 9.5190 | 9.5460 | 9.5730 | 9.6000 | 9.6270 | 9.6540 | 9.6810 | 9.7080 | 9.7350 | 9.7620 | 9.7890 | 9.8160 | 9.8430 | 9.8700 | 9.8970 | 9.9240 | 9.9510 | 9.9780 | 10.0050 | 10.0320 | 10.0590 | 10.0860 | 10.1130 | 10.140 |
|--|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|--------|
|--|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|--------|

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XESB35)

ALPHA ( 1 ) = -.4.062 BETA ( 3 ) = .4.274

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4870 .5740

## PHI

140.000  
150.000  
151.000  
162.000  
165.000  
169.000  
174.000  
180.000

1.3059 .9475 .7345 .6172 .5398 .5789 .9158 .8369 -.5697 -.4198 -.2278 -.2202 -.0362

.0634 -.0258 -.0791 -.1586 -.2492 -.3042 -.2755  
.0467 -.0725 -.0725 -.1472 -.2620 -.2785 -.4018  
.1585 .1215 .2211 .2850 -.0095 -.1339 -.1831  
.1725 .1729 .2736 .2936 -.0615 -.2015 -.2097  
.3231 .2339 -.1715 -.2359 -.2609  
.1836 .2317 .3518 .1489 -.2842 -.3038 -.3604  
.120.000  
135.000  
150.000  
165.000  
180.000

.1769 .2985 .4956 .6104  
.2648 .1915  
.1173 .0848  
-.4450  
-.4112

## X/LB

PHI  
140.000  
150.000  
151.000  
162.000  
165.000  
169.000  
174.000  
180.000

1.3059 .9475 .7345 .6172 .5398 .5789 .9158 .8369 -.5697 -.4198 -.2278 -.2202 -.0362

.0634 -.0258 -.0791 -.1586 -.2492 -.3042 -.2755  
.0467 -.0725 -.0725 -.1472 -.2620 -.2785 -.4018  
.1585 .1215 .2211 .2850 -.0095 -.1339 -.1831  
.1725 .1729 .2736 .2936 -.0615 -.2015 -.2097  
.3231 .2339 -.1715 -.2359 -.2609  
.1836 .2317 .3518 .1489 -.2842 -.3038 -.3604  
.120.000  
135.000  
150.000  
165.000  
180.000

.1769 .2985 .4956 .6104  
.2648 .1915  
.1173 .0848  
-.4450  
-.4112

ALPHA ( 2 ) = -.023 BETA ( 1 ) = -3.863 MACH = 1.0993 Q = 599.08 P = 708.12 RN/L = 3.1793

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4870 .5740

## PHI

140.000  
20.000  
40.000  
55.000  
70.000  
90.000  
120.000  
140.000  
150.000  
151.000  
162.000  
165.000  
169.000  
174.000

1.3275 .6805 .2556 .1661 .0729 .0255 .0235  
.2913 .1665 .0500 .0255  
.4641 .2153 .1040 .0659  
.5882 .3619 .2684 .1915  
.6515 .4249 .3270 .2798  
.6923 .4732 .3494 .3178  
.7184 .5440 .4360 .4605  
.6767 .5451 .4522 .5094  
.8095  
.5223  
.5689  
.8524  
.9372

.0235  
-.0036  
-.0291  
.1063  
.1646  
.1967  
.4138  
.8095  
.5223  
.5689  
.8524  
.9372

-.0098 -.0370 -.0919 -.0862 -.1030 -.0395  
-.0464  
-.1145 -.1201 -.1200 -.0813 -.1098 -.0301  
.0117  
.0372 -.1405 -.1332 -.0461  
-.0238 -.2365 -.1565 -.0467  
-.0115 -.2921 -.5451 -.1813 -.0820  
-.0677  
-.3485 -.6093 -.4116 -.1797 -.0558  
-.4685 -.4910 -.3733 -.2136 -.0497

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB835)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = -.023 BETA ( 1 ) = -3.863

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | PHI   | 180.000 | 1.3275 | .8519  | .6090  | .5150  | .4435  | .5016  | .7729 | -.6022 | -.5169 | -.3023 | -.2530 | -.0438 |
|---------|-------|---------|--------|--------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|
| X/LB    | PHI   | .0000   | .0080  | .0230  | .0480  | .0700  | .1120  | .1580  | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  |
| PHI     | .000  | .0987   | .0560  | .0197  | -.0610 | -.1329 | -.2056 | -.2241 | .3277 | .2319  |        |        |        |        |
| 40.000  | .0119 | .0268   | -.0504 | -.1622 | -.1811 | -.3575 |        |        | .2081 | .1400  |        |        |        |        |
| 70.000  | .0353 | -.1391  | .0553  | .2722  | .0442  | -.0401 | -.0743 |        |       |        |        |        |        |        |
| 90.000  | .0688 | -.0855  | .2668  | .2831  | -.0778 | -.1792 | -.1650 |        |       |        |        |        |        |        |
| 105.000 |       |         |        |        |        |        |        |        |       |        |        |        |        |        |
| 110.000 |       |         |        |        |        |        |        |        |       |        |        |        |        |        |
| 120.000 | .0456 | .0216   | .3953  | .3047  | -.1395 | -.1608 | -.1955 |        |       |        |        |        |        |        |
| 135.000 |       |         | .4519  | .4360  | -.1042 | -.0718 | -.1244 |        |       |        |        |        |        |        |
| 150.000 | .0919 | .1761   | .4495  | .4047  | -.0124 | -.0076 | -.1080 |        |       |        |        |        |        |        |
| 165.000 | .0957 |         | .4264  |        | .2528  | .0601  | -.3832 |        |       |        |        |        |        |        |
| 180.000 | .1025 | .2167   | .4106  | .4575  |        |        |        |        |       |        |        |        |        |        |

ALPHA ( 2 ) = -.020 BETA ( 2 ) = .185 MACH = 1.0993 Q = 599.08 P = 708.12 RN/L = 3.1793

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | PHI   | 180.000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|---------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|
| PHI     | .022  | 1.3327  | .6903 | .2600 | .1720 | .0839 | .0242 | .0346 | .0346 | .0066 | -.0359 | -.0904 | -.0867 | -.1000 | -.0230 |       |
| 20.000  | .2798 | .1652   | .1911 | .0888 | .0624 | .0639 | .1459 | .0015 | .0198 | .0723 | -.0945 | -.1203 | -.0827 | -.0896 | .0060  |       |
| 40.000  | .4009 | .2807   | .3187 | .2246 | .2089 | .1030 | .1200 | .0264 | .0314 | .0264 | -.4271 | -.3129 | -.1814 | -.0411 |        |       |
| 55.000  | .4911 | .5404   | .5827 | .3599 | .2454 | .3474 | .3919 | .3216 | .1403 | .1304 | -.3662 | -.6051 | -.1554 | -.0454 |        |       |
| 70.000  | .7234 | .6306   | .4585 | .4210 | .4796 | .7357 |       | .4416 | .2197 | .4819 | -.5773 | -.3785 | -.2036 | -.0266 |        |       |
| 90.000  |       | .6377   | .210  |       |       |       |       | .5041 |       |       |        |        |        |        |        |       |
| 105.000 |       |         |       |       |       |       |       |       |       |       |        |        |        |        |        |       |
| 120.000 |       |         |       |       |       |       |       |       |       |       |        |        |        |        |        |       |
| 135.000 |       |         |       |       |       |       |       |       |       |       |        |        |        |        |        |       |
| 150.000 |       |         |       |       |       |       |       |       |       |       |        |        |        |        |        |       |
| 165.000 |       |         |       |       |       |       |       |       |       |       |        |        |        |        |        |       |
| 174.000 |       |         |       |       |       |       |       |       |       |       |        |        |        |        |        |       |
| 180.000 |       |         |       |       |       |       |       |       |       |       |        |        |        |        |        |       |

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI .0914 .0416 .0029 -.0693 -.1630 -.1915 -.1852

40.000 .0440 .0171 -.0546 -.1691 -.1731 -.3066

.3612 .2479 .1328

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8835)

ALPHA ( 2 ) = -.020 BETA ( 2 ) = .105

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

70.000 .0234 -.1389 .1483 .2410 .0025 -.0880 -.1346  
 90.000 .0555 -.0655 .2125 .2293 -.0460 -.1441 -.1578  
 105.000 .2859 .2074 -.1256 -.2065 -.2336  
 110.000  
 120.000 .0772 .1144 .3438 .2128 -.1757 -.2281 -.2732  
 135.000 .3887 .4224 -.1010 -.1433 -.1890  
 150.000 .0938 .1955 .4160 .4570 -.0255 -.0957 -.1743  
 165.000 .0940 .4216 .1834 -.0335 -.3765  
 180.000 .0956 .2293 .4321 .5489

ALPHA ( 2 ) = -.024 BETA ( 3 ) = .4249 MACH = 1.0993 Q = 59.98 P = 708.12 RN/L = 3.1793

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1590 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.3160 .6731 .2473 .1706 .0781 .0265  
 20.000 .2463 .1495 .0366 .0286 .0256  
 40.000 .3310 .1573 .0642 .0597 .0272  
 55.000 .3940 .1957 .1203 .1088 .0345  
 70.000 .4313 .2143 .1417 .1463 .0494  
 90.000 .4751 .2509 .1549 .1628 .0546  
 120.000 .5365 .3519 .2518 .3110 .2217  
 140.000 .5785 .4745 .3727 .4277 .6566  
 150.000  
 160.000  
 170.000  
 180.000 .13160 .8200 .6181 .5158 .4406 .5003 .6735 .7780 .7950  
 .6520 .7290 .7790 .8210 .8790 .9210 .94 .9990 1.0180 1.0460

PHI

.000 .1000 .0547 .0127 -.0686 -.1604 -.1769 -.2017  
 40.000 .0551 .0216 -.0604 -.1774 -.1880 -.3242  
 70.000 .0438 -.0965 .1149 .2074 -.0472 -.1582 -.2017  
 90.000 .0828 -.0138 .1681 .1958 .1132 .2139 .2237  
 105.000 .2415 .1547 .2065 .2757 .3037  
 110.000  
 120.000 .1102 .1118 .2770 .0767 -.2850 -.3425 -.3813  
 135.000 .3656 .3957 .1949 .2566 -.2933  
 150.000 .1198 .2008 .3930 .4136 -.0936 -.2100 -.2823

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8835)

ALPHA ( 2 ) = -.024 BETA ( 3 ) = 4.249

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 .1158 .3968  
180.000 .1116 .2158 .4136 .4706 .1093 -.1330 -.3747

ALPHA ( 3 ) = 3.952 BETA ( 1 ) = -3.863 MACH = 1.0983 Q = 598.70 P = 709.06 RN/L = 3.1705

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.3163 .8209 .3823 .2604 .1705 .0912 .0456 .0142 -.0315 -.0307 -.0591 -.0414  
20.000 .4270 .4270 .2722 .2722 .1504 .0837 .0237 .0148 -.0383 -.0048 -.0645 .0132  
40.000 .5714 .5714 .319 .319 .1534 .1534 .0109 .0740 .0851 -.1304 -.1391 -.1006  
55.000 .6475 .6475 .251 .251 .341 .2545 .1798 .0279 -.3446 -.1888 -.1984 -.1030  
70.000 .6816 .6816 .4414 .4414 .3368 .2941 .1974 .0279 -.3446 -.1888 -.1984 -.1030  
90.000 .8254 .8254 .6668 .6668 .4572 .3451 .2302 .0042 -.3137 -.5382 -.3091 -.1678  
120.000 .6375 .6375 .4690 .4690 .3652 .4113 .4185 -.0838 -.6745 -.4921 -.2083 -.0817  
140.000 .5614 .5614 .4374 .4374 .3531 .4362 .7859 .5011  
150.000 .150.000 .5315  
162.000  
165.000  
169.000  
174.000  
180.000

1.3163 .7155 .4823 .4102 .3430 .4300 .8175

X/LB

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .1633 .1695 .1310 .0362 -.0709 -.1530 -.1835  
40.000 .1081 .1508 .1508 .0445 -.1031 -.1045 -.2994  
70.000 -.2433 -.3070 .1631 -.0186 -.0504 -.0329  
90.000 -.3204 -.1838 -.0630 .1438 -.0517 .1617 -.0699  
105.000 .1399 .1544 .1236 -.2358 -.0939  
110.000  
120.000  
135.000  
150.000  
165.000  
180.000.0555 -.0877 .2784 .1495 -.1678 -.2350 -.2481  
1081 .1081 .1508 .1508 .0445 -.1031 -.1045 -.2994  
70.000 -.2433 -.3070 .1631 -.0186 -.0504 -.0329  
90.000 -.3204 -.1838 -.0630 .1438 -.0517 .1617 -.0699  
105.000 .1399 .1544 .1236 -.2358 -.0939  
110.000  
120.000  
135.000  
150.000  
165.000  
180.000.0507 .1055 .3113 .3056 -.1589 -.1515 -.1943  
1081 .1081 .1508 .1508 .0445 -.1031 -.1045 -.2994  
70.000 -.2433 -.3070 .1631 -.0186 -.0504 -.0329  
90.000 -.3204 -.1838 -.0630 .1438 -.0517 .1617 -.0699  
105.000 .1399 .1544 .1236 -.2358 -.0939  
110.000  
120.000  
135.000  
150.000  
165.000  
180.000

.0504 .1452 .3158 .3861 .1955 .0162 -.4018

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ALPHA ( 3 ) = 3.952 BETA ( 2 ) = .169 MACH = 1.0983 Q = 598.70 P = 709.06 RN/L = 3.1785  
(XEB835)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

SECTION 1 ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | 0.000 | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1860 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|-------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|
| PHI     | 0.000 | 1.3210 | .8225 | .3857 | .2666 | .1680 | .1017 | .0920 | .0319  | .0485  | .0180  | -.0318 | -.0339 | -.0554 | -.0379 |
| 20.000  |       |        | .4027 | .2608 | .1422 | .0714 | .0920 | .1043 | .0258  | .0319  | -.0153 | -.0530 | -.0268 | -.0743 | .0072  |
| 40.000  |       |        | .4987 | .2689 | .1857 | .1347 | .1341 | .1395 | .0223  | .0231  | -.3809 | -.2129 | -.2053 | -.1000 |        |
| 55.000  |       |        | .5396 | .3312 | .2393 | .1929 | .1606 | .1606 | .0626  | .0626  | -.4100 | -.2672 | -.2488 | -.0847 |        |
| 70.000  |       |        | .5469 | .3361 | .2353 | .2215 | .3408 |       | -.1144 | -.1144 | -.3828 | -.6025 | -.2171 | -.0830 |        |
| 90.000  |       | .6856  | .3503 | .3503 | .2494 | .3673 |       |       | -.2124 | -.5003 | -.6792 | -.4631 | -.1980 | -.0452 |        |
| 120.000 |       |        | .5601 | .3940 | .2922 |       |       |       | .4233  |        |        |        |        |        |        |
| 140.000 |       |        | .5313 | .4212 | .3253 | .4188 |       |       | .4760  |        |        |        |        |        |        |
| 150.000 |       |        |       |       |       |       |       |       |        |        |        |        |        |        |        |
| 162.000 |       |        |       |       |       |       |       |       |        |        |        |        |        |        |        |
| 165.000 |       |        |       |       |       |       |       |       |        |        |        |        |        |        |        |
| 169.000 |       |        |       |       |       |       |       |       |        |        |        |        |        |        |        |
| 174.000 |       |        |       |       |       |       |       |       |        |        |        |        |        |        |        |
| 180.000 |       |        |       |       |       |       |       |       |        |        |        |        |        |        |        |

X/LB 1.3210 .7072 .5032 .4101 .3463 .4391 .8779 .7608 .9990 1.0180 1.0460

PHI .1515 .1626 .1274 .0361 .0621 .1144 .1719 .4204 .2743

|         |        |        |        |       |        |        |        |       |       |
|---------|--------|--------|--------|-------|--------|--------|--------|-------|-------|
| 40.000  | .1303  | .1626  | .1444  | .0425 | -.0926 | -.1257 | -.2659 | .4204 | .2743 |
| 70.000  | -.0700 | -.2521 | -.1857 | .1449 | -.0520 | -.1370 | -.1565 |       |       |
| 90.000  | -.0317 | -.1767 | .0362  | .1160 | -.1073 | -.1953 | -.1849 |       |       |
| 104.000 |        |        | .1807  | .0947 | -.1813 | -.2626 | -.2953 |       |       |
| 110.000 |        |        | .2337  | .0922 | -.2022 | -.2819 | -.3271 |       |       |
| 120.000 | .0035  | -.0419 | .2875  | .3726 | -.1311 | -.2034 | -.2528 |       |       |
| 135.000 | .0618  | .0689  | .3010  | .4730 | -.0621 | -.1510 | -.2287 |       |       |
| 150.000 | .0703  |        | .3270  | .1363 | -.0008 | -.4032 |        |       |       |
| 164.000 | .0712  | .0346  | .3453  | .5095 |        |        |        |       |       |

ALPHA ( 3 ) = 3.960 BETA ( 3 ) = 4.243 MACH = 1.0983 Q = 598.70 P = 709.06 RN/L = 3.1785

SECTION 1 ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | 0.000 | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | 0.000 | 1.3073 | .8073 | .3769 | .2664 | .1607 | .0946 | .0946 | .0474  | .0108  | -.0325 | -.0340 | -.0604 | -.0446 |       |
| 20.000  |       |        | .3691 | .2377 | .1208 | .0506 | .0840 | .0840 | .0252  | -.0263 | -.0743 | -.0569 | -.0918 | .0017  |       |
| 40.000  |       |        | .4148 | .2412 | .1467 | .1018 | .1014 | .1014 | .0198  | -.0263 | -.0743 | -.0569 | -.0918 |        |       |
| 55.000  |       |        | .4323 | .2407 | .1588 | .1338 | .0929 | .0929 | -.0055 | -.0259 | -.2843 | -.2574 | -.0824 |        |       |
| 70.000  |       |        | .4378 | .2358 | .1451 | .1598 | .0946 | .0946 | -.0268 | -.4259 | -.2843 | -.2574 | -.0824 |        |       |
| 90.000  |       | .5351  | .4559 | .2523 | .1496 | .1841 | .1038 | .1038 | -.1407 | -.4684 | -.3329 | -.2578 | -.0623 |        |       |
| 120.000 |       |        | .4774 | .3177 | .2145 | .3084 | .2552 |       | -.2179 | -.4618 | -.6463 | -.1912 | -.6436 |        |       |

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TABULATED PRESSURE DATA - OA148 ( AMES 11-073-1 )

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(XEB835)

AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 3 ) = 3.960 BETA ( 3 ) = 4.243

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040  | .2510  | .3010 | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|
| PHI     |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 140.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 151.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 169.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 180.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| X/LB    | 1.3073 | .6829 | .4985 | .4065 | .3352 | .4305 | .8337 | .7551 | .9950 | 1.0180 | 1.0460 |       |       |       |       |
| PHI     |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 40.000  |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 70.000  |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 90.000  |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 105.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 110.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 120.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 135.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |
| 180.000 |        |       |       |       |       |       |       |       |       |        |        |       |       |       |       |

PHI

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 105.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 110.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 135.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

ALPHA ( 4 ) =

8.030 BETA ( 1 ) =

-3.862 MACH =

1.0987

Q

= 598.57

P

= 708.35

RM/L

= 3.1769

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 20.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 55.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

.8589

.7859

-.6030

-.6795

-.5088

-.2313

-.0829

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TABLED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

(XEB835)

$$\text{ALPHA} (4) = 0.030 \quad \text{BETA} (1) = -3.862$$

AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

SECTION C ORBITER FUSELAGE

|         | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1770   | .2040   | .2510   | .3010   | .3780   | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|---------|---------|---------|---------|---------|-------|-------|
| X/LB    |        |       |       |       |       |       |       |         |         |         |         |         |       |       |
| PHI     |        |       |       |       |       |       |       |         |         |         |         |         |       |       |
| 100 000 | 1 2040 | 5557  | 7508  | 7185  | 2461  | 7637  | .6930 | - .7048 | - .6426 | - .3980 | - .2117 | - .0616 |       |       |

[illegible]

|      |       |       |       |       |       |       |       |       |        |        |
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| X/LB | .6520 | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0450 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|

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|  | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 | 2062 | 2063 | 2064 | 2065 | 2066 | 2067 | 2068 | 2069 | 2070 | 2071 | 2072 | 2073 | 2074 | 2075 | 2076 | 2077 | 2078 | 2079 | 2080 | 2081 | 2082 | 2083 | 2084 | 2085 | 2086 | 2087 | 2088 | 2089 | 2090 | 2091 | 2092 | 2093 | 2094 | 2095 | 2096 | 2097 | 2098 | 2099 | 2100 | 2101 | 2102 | 2103 | 2104 | 2105 | 2106 | 2107 | 2108 | 2109 | 2110 | 2111 | 2112 | 2113 | 2114 | 2115 | 2116 | 2117 | 2118 | 2119 | 2120 | 2121 | 2122 | 2123 | 2124 | 2125 | 2126 | 2127 | 2128 | 2129 | 2130 | 2131 | 2132 | 2133 | 2134 | 2135 | 2136 | 2137 | 2138 | 2139 | 2140 | 2141 | 2142 | 2143 | 2144 | 2145 | 2146 | 2147 | 2148 | 2149 | 2150 | 2151 | 2152 | 2153 | 2154 | 2155 | 2156 | 2157 | 2158 | 2159 | 2160 | 2161 | 2162 | 2163 | 2164 | 2165 | 2166 | 2167 | 2168 | 2169 | 2170 | 2171 | 2172 | 2173 | 2174 | 2175 | 2176 | 2177 | 2178 | 2179 | 2180 | 2181 | 2182 | 2183 | 2184 | 2185 | 2186 | 2187 | 2188 | 2189 | 2190 | 2191 | 2192 | 2193 | 2194 | 2195 | 2196 | 2197 | 2198 | 2199 | 2200 | 2201 | 2202 | 2203 | 2204 | 2205 | 2206 | 2207 | 2208 | 2209 | 2210 | 2211 | 2212 | 2213 | 2214 | 2215 | 2216 | 2217 | 2218 | 2219 | 2220 | 2221 | 2222 | 2223 | 2224 | 2225 | 2226 | 2227 | 2228 | 2229 | 2230 | 2231 | 2232 | 2233 | 2234 | 2235 | 2236 | 2237 | 2238 | 2239 | 2240 | 2241 | 2242 | 2243 | 2244 | 2245 | 2246 | 2247 | 2248 | 2249 | 2250 | 2251 | 2252 | 2253 | 2254 | 2255 | 2256 | 2257 | 2258 | 2259 | 2260 | 2261 | 2262 | 2263 | 2264 | 2265 | 2266 | 2267 | 2268 | 2269 | 2270 | 2271 | 2272 | 2273 | 2274 | 2275 | 2276 | 2277 | 2278 | 2279 | 2280 | 2281 | 2282 | 2283 | 2284 | 2285 | 2286 | 2287 | 2288 | 2289 | 2290 | 2291 | 2292 | 2293 | 2294 | 2295 | 2296 | 2297 | 2298 | 2299 | 2300 | 2301 | 2302 | 2303 | 2304 | 2305 | 2306 | 2307 | 2308 | 2309 | 2310 | 2311 | 2312 | 2313 | 2314 | 2315 | 2316 | 2317 | 2318 | 2319 | 2320 | 2321 | 2322 | 2323 | 2324 | 2325 | 2326 | 2327 | 2328 | 2329 | 2330 | 2331 | 2332 | 2333 | 2334 | 2335 | 2336 | 2337 | 2338 | 2339 | 2340 | 2341 | 2342 | 2343 | 2344 | 2345 | 2346 | 2347 | 2348 | 2349 | 2350 | 2351 | 2352 | 2353 | 2354 | 2355 | 2356 | 2357 | 2358 | 2359 | 2360 | 2361 | 2362 | 2363 | 2364 | 2365 | 2366 | 2367 | 2368 | 2369 | 2370 | 2371 | 2372 | 2373 | 2374 | 2375 | 2376 | 2377 | 2378 | 2379 | 2380 | 2381 | 2382 | 2383 | 2384 | 2385 | 2386 | 2387 | 2388 | 2389 | 2390 | 2391 | 2392 | 2393 | 2394 | 2395 | 2396 | 2397 | 2398 | 2399 | 2400 | 2401 | 2402 | 2403 | 2404 | 2405 | 2406 | 2407 | 2408 | 2409 | 2410 | 2411 | 2412 | 2413 | 2414 | 2415 | 2416 | 2417 | 2418 | 2419 | 2420 | 2421 | 2422 | 2 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|

|        |       |       |       |        |        |        |
|--------|-------|-------|-------|--------|--------|--------|
| 40.000 | .2408 | .2230 | .1142 | -.0453 | -.0449 | -.2367 |
| 70.000 | .2007 | .2020 | .0112 | -.0015 | -.0178 | -.0043 |

|        |         |         |         |       |         |         |         |
|--------|---------|---------|---------|-------|---------|---------|---------|
| 70.050 | - .0987 | - .3242 | - .3928 | .0442 | - .0043 | - .0478 | - .0543 |
| 90.000 | - .0673 | - .3509 | - .2782 | .0332 | - .0559 | - .1142 | - .1291 |

|         |         |         |       |        |        |        |
|---------|---------|---------|-------|--------|--------|--------|
| 90.000  | - .0673 | - .2782 | .0332 | -.0330 | -.1142 | -.1123 |
| 105.000 |         |         | .0893 | -.1097 | .1765  | -.1949 |
|         |         |         | .0177 |        |        |        |

**- .3889**

|         |         |         |       |       |         |         |         |         |
|---------|---------|---------|-------|-------|---------|---------|---------|---------|
| 120.000 | - .1592 | - .1838 | .1718 | .1253 | - .2099 | - .2101 | - .2177 | - .2903 |
|---------|---------|---------|-------|-------|---------|---------|---------|---------|

|         |       |       |        |         |         |
|---------|-------|-------|--------|---------|---------|
| 135.000 | .1602 | .3377 | -.1874 | -.1798  | -.1916  |
| 134.000 | .1711 | .4089 | -.0925 | - .1448 | - .3210 |

| Year | 1950    | 1951    | 1952    | 1953  | 1954    | 1955    | 1956    | 1957    | 1958    | 1959    | 1960    | 1961    | 1962    | 1963    | 1964    | 1965    | 1966    | 1967    | 1968    | 1969    | 1970    | 1971    | 1972    | 1973    | 1974    | 1975    | 1976    | 1977    | 1978    | 1979    | 1980    | 1981    | 1982    | 1983     | 1984     | 1985     | 1986     | 1987     | 1988     | 1989     | 1990     | 1991     | 1992     | 1993     | 1994     | 1995     | 1996     | 1997     | 1998     | 1999     | 2000     | 2001     | 2002     | 2003     | 2004     | 2005     | 2006     | 2007     | 2008     | 2009     | 2010     | 2011     | 2012     | 2013     | 2014     | 2015     | 2016     | 2017     | 2018     | 2019     | 2020     | 2021     | 2022     | 2023     | 2024     | 2025     | 2026     | 2027     | 2028     | 2029     | 2030     | 2031     | 2032     | 2033     | 2034     | 2035     | 2036     | 2037     | 2038     | 2039     | 2040     | 2041     | 2042     | 2043     | 2044     | 2045     | 2046     | 2047     | 2048     | 2049     | 2050     | 2051     | 2052      | 2053      | 2054      | 2055      | 2056      | 2057      | 2058      | 2059      | 2060      | 2061      | 2062      | 2063      | 2064      | 2065      | 2066      | 2067      | 2068      | 2069      | 2070      | 2071      | 2072      | 2073      | 2074      | 2075      | 2076      | 2077      | 2078      | 2079      | 2080      | 2081      | 2082      | 2083      | 2084      | 2085      | 2086      | 2087      | 2088      | 2089      | 2090      | 2091      | 2092      | 2093      | 2094      | 2095      | 2096      | 2097      | 2098      | 2099      | 2100      |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |      |
|------|---------|---------|---------|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|
| 1950 | 150.000 | -0.0034 | -0.0511 | .4080 | -0.0873 | -0.1448 | -0.2210 | -0.3133 | -0.4334 | -0.5833 | -0.7534 | -0.9433 | -1.1534 | -1.3833 | -1.6334 | -1.9033 | -2.1934 | -2.5033 | -2.8334 | -3.1833 | -3.5534 | -3.9433 | -4.3534 | -4.7833 | -5.2334 | -5.7033 | -6.1934 | -6.7033 | -7.2334 | -7.7833 | -8.3534 | -8.9433 | -9.5534 | -10.1833 | -10.8334 | -11.5033 | -12.1934 | -12.9033 | -13.6334 | -14.3833 | -15.1534 | -15.9433 | -16.7534 | -17.5833 | -18.4334 | -19.3033 | -20.1934 | -21.1033 | -22.0334 | -22.9833 | -23.9534 | -24.9433 | -25.9534 | -26.9833 | -28.0334 | -29.1033 | -30.1934 | -31.3033 | -32.4334 | -33.5833 | -34.7534 | -35.9433 | -37.1534 | -38.3833 | -39.6334 | -40.9033 | -42.1934 | -43.5033 | -44.8334 | -46.1833 | -47.5534 | -48.9433 | -50.3534 | -51.7833 | -53.2334 | -54.7033 | -56.1934 | -57.7033 | -59.2334 | -60.7833 | -62.3534 | -63.9433 | -65.5534 | -67.1833 | -68.8334 | -70.5033 | -72.1934 | -73.9033 | -75.6334 | -77.3833 | -79.1534 | -80.9433 | -82.7534 | -84.5833 | -86.4334 | -88.3033 | -90.1934 | -92.1033 | -94.0334 | -95.9833 | -97.9534 | -99.9433 | -101.9534 | -103.9833 | -106.0334 | -108.1033 | -110.1934 | -112.3033 | -114.4334 | -116.5833 | -118.7534 | -120.9433 | -123.1534 | -125.3833 | -127.6334 | -129.9033 | -132.1934 | -134.5033 | -136.8334 | -139.1833 | -141.5534 | -143.9433 | -146.3534 | -148.7833 | -151.2334 | -153.6833 | -156.1534 | -158.6433 | -161.1534 | -163.6833 | -166.2334 | -168.7833 | -171.3534 | -173.9433 | -176.5534 | -179.1833 | -181.8334 | -184.5033 | -187.1934 | -189.9033 | -192.6334 | -195.3833 | -198.1534 | -200.9433 | -203.7534 | -206.5833 | -209.4334 | -212.3033 | -215.1934 | -218.1033 | -221.0334 | -223.9833 | -226.9534 | -229.9433 | -232.9534 | -235.9833 | -239.0334 | -242.1033 | -245.1934 | -248.3033 | -251.4334 | -254.5833 | -257.7534 | -260.9433 | -264.1534 | -267.3833 | -270.6334 | -273.9033 | -277.1934 | -280.5033 | -283.8334 | -287.1833 | -290.5534 | -293.9433 | -297.3534 | -300.7833 | -304.2334 | -307.6833 | -311.1534 | -314.6433 | -318.1534 | -321.6833 | -325.2334 | -328.7833 | -332.3534 | -335.9433 | -339.5534 | -343.1833 | -346.8334 | -350.5033 | -354.1934 | -357 |

| Account | 1934  | 1935  | 1936   |
|---------|-------|-------|--------|
| 163-000 | .0334 | .0125 | .0202  |
| 180-000 | .0185 | .0125 | .02740 |
|         |       |       | .1983  |
|         |       |       | .1133  |
|         |       |       | .1033  |
|         |       |       | .1033  |

**0**

| DATE | TIME | DETA | WACH   | P      | RN/L | 3.1769 |
|------|------|------|--------|--------|------|--------|
| 103  | 0097 | 0    | 598.57 | 708.35 |      |        |

SECTION 1108BITE & USAGE

DEPENDENT VARIABLE CP

[illegible]

PHI 0123 0357 0356 0355 0354 0353 0352 0351 0350 0349 0348 0347 0346 0345 0344 0343 0342 0341 0340 0339 0338 0337 0336 0335 0334 0333 0332 0331 0330 0329 0328 0327 0326 0325 0324 0323 0322 0321 0320 0319 0318 0317 0316 0315 0314 0313 0312 0311 0310 0309 0308 0307 0306 0305 0304 0303 0302 0301 0300 0299 0298 0297 0296 0295 0294 0293 0292 0291 0290 0289 0288 0287 0286 0285 0284 0283 0282 0281 0280 0279 0278 0277 0276 0275 0274 0273 0272 0271 0270 0269 0268 0267 0266 0265 0264 0263 0262 0261 0260 0259 0258 0257 0256 0255 0254 0253 0252 0251 0250 0249 0248 0247 0246 0245 0244 0243 0242 0241 0240 0239 0238 0237 0236 0235 0234 0233 0232 0231 0230 0229 0228 0227 0226 0225 0224 0223 0222 0221 0220 0219 0218 0217 0216 0215 0214 0213 0212 0211 0210 0209 0208 0207 0206 0205 0204 0203 0202 0201 0200 0199 0198 0197 0196 0195 0194 0193 0192 0191 0190 0189 0188 0187 0186 0185 0184 0183 0182 0181 0180 0179 0178 0177 0176 0175 0174 0173 0172 0171 0170 0169 0168 0167 0166 0165 0164 0163 0162 0161 0160 0159 0158 0157 0156 0155 0154 0153 0152 0151 0150 0149 0148 0147 0146 0145 0144 0143 0142 0141 0140 0139 0138 0137 0136 0135 0134 0133 0132 0131 0130 0129 0128 0127 0126 0125 0124 0123 0122 0121 0120 0119 0118 0117 0116 0115 0114 0113 0112 0111 0110 0109 0108 0107 0106 0105 0104 0103 0102 0101 0100 0099 0098 0097 0096 0095 0094 0093 0092 0091 0090 0089 0088 0087 0086 0085 0084 0083 0082 0081 0080 0079 0078 0077 0076 0075 0074 0073 0072 0071 0070 0069 0068 0067 0066 0065 0064 0063 0062 0061 0060 0059 0058 0057 0056 0055 0054 0053 0052 0051 0050 0049 0048 0047 0046 0045 0044 0043 0042 0041 0040 0039 0038 0037 0036 0035 0034 0033 0032 0031 0030 0029 0028 0027 0026 0025 0024 0023 0022 0021 0020 0019 0018 0017 0016 0015 0014 0013 0012 0011 0010 0009 0008 0007 0006 0005 0004 0003 0002 0001 0000

[illegible]

| Variable                                | Mean   | SD    | Alpha | Reliability |
|---|--------|-------|-------|-------------|
| 1. Age                                  | 20.000 | .5339 | .3677 | .2398       |
| 2. Sex                                  | 1.673  | .1466 | .1085 | .0316       |
| 3. Height                               | 1.641  | .1143 | .0529 | .0138       |
| 4. Weight                               | 1.641  | .1143 | .0529 | .0138       |
| 5. BMI                                  | 1.641  | .1143 | .0529 | .0138       |
| 6. Blood Pressure                       | 1.641  | .1143 | .0529 | .0138       |
| 7. Heart Rate                           | 1.641  | .1143 | .0529 | .0138       |
| 8. Cholesterol                          | 1.641  | .1143 | .0529 | .0138       |
| 9. Glucose                              | 1.641  | .1143 | .0529 | .0138       |
| 10. Hemoglobin                          | 1.641  | .1143 | .0529 | .0138       |
| 11. Hematocrit                          | 1.641  | .1143 | .0529 | .0138       |
| 12. Hemoglobin A1c                      | 1.641  | .1143 | .0529 | .0138       |
| 13. Fasting Glucose                     | 1.641  | .1143 | .0529 | .0138       |
| 14. Fasting Insulin                     | 1.641  | .1143 | .0529 | .0138       |
| 15. Fasting C-peptide                   | 1.641  | .1143 | .0529 | .0138       |
| 16. Fasting Proinsulin                  | 1.641  | .1143 | .0529 | .0138       |
| 17. Fasting Proglucagon                 | 1.641  | .1143 | .0529 | .0138       |
| 18. Fasting Proglucagon-like peptide-1  | 1.641  | .1143 | .0529 | .0138       |
| 19. Fasting Proglucagon-like peptide-2  | 1.641  | .1143 | .0529 | .0138       |
| 20. Fasting Proglucagon-like peptide-3  | 1.641  | .1143 | .0529 | .0138       |
| 21. Fasting Proglucagon-like peptide-4  | 1.641  | .1143 | .0529 | .0138       |
| 22. Fasting Proglucagon-like peptide-5  | 1.641  | .1143 | .0529 | .0138       |
| 23. Fasting Proglucagon-like peptide-6  | 1.641  | .1143 | .0529 | .0138       |
| 24. Fasting Proglucagon-like peptide-7  | 1.641  | .1143 | .0529 | .0138       |
| 25. Fasting Proglucagon-like peptide-8  | 1.641  | .1143 | .0529 | .0138       |
| 26. Fasting Proglucagon-like peptide-9  | 1.641  | .1143 | .0529 | .0138       |
| 27. Fasting Proglucagon-like peptide-10 | 1.641  | .1143 | .0529 | .0138       |
| 28. Fasting Proglucagon-like peptide-11 | 1.641  | .1143 | .0529 | .0138       |
| 29. Fasting Proglucagon-like peptide-12 | 1.641  | .1143 | .0529 | .0138       |
| 30. Fasting Proglucagon-like peptide-13 | 1.641  | .1143 | .0529 | .0138       |
| 31. Fasting Proglucagon-like peptide-14 | 1.641  | .1143 | .0529 | .0138       |
| 32. Fasting Proglucagon-like peptide-15 | 1.641  | .1143 | .0529 | .0138       |
| 33. Fasting Proglucagon-like peptide-16 | 1.641  | .1143 | .0529 | .0138       |
| 34. Fasting Proglucagon-like peptide-17 | 1.641  | .1143 | .0529 | .0138       |
| 35. Fasting Proglucagon-like peptide-18 | 1.641  | .1143 | .0529 | .0138       |
| 36. Fasting Proglucagon-like peptide-19 | 1.641  | .1143 | .0529 | .0138       |
| 37. Fasting Proglucagon-like peptide-20 | 1.641  | .1143 | .0529 | .0138       |
| 38. Fasting Proglucagon-like peptide-21 | 1.641  | .1143 | .0529 | .0138       |
| 39. Fasting Proglucagon-like peptide-22 | 1.641  | .1143 | .0529 | .0138       |
| 40. Fasting Proglucagon-like peptide-23 | 1.641  | .1143 | .0529 | .0138       |
| 41. Fasting Proglucagon-like peptide-24 | 1.641  | .1143 | .0529 | .0138       |
| 42. Fasting Proglucagon-like peptide-25 | 1.641  | .1143 | .0529 | .0138       |
| 43. Fasting Proglucagon-like peptide-26 | 1.641  | .1143 | .0529 | .0138       |
| 44. Fasting Proglucagon-like peptide-27 | 1.641  | .1143 | .0529 | .0138       |
| 45. Fasting Proglucagon-like peptide-28 | 1.641  | .1143 | .0529 | .0138       |
| 46. Fasting Proglucagon-like peptide-29 | 1.641  | .1143 | .0529 | .0138       |
| 47. Fasting Proglucagon-like peptide-30 | 1.641  | .1143 | .0529 | .0138       |
| 48. Fasting Proglucagon-like peptide-31 | 1.641  | .1143 | .0529 | .0138       |
| 49. Fasting Proglucagon-like peptide-32 | 1.641  | .1143 | .0529 | .0138       |
| 50. Fasting Proglucagon-like peptide-33 | 1.641  | .1143 | .0529 | .0138       |
| 51. Fasting Proglucagon-like peptide-34 | 1.641  | .1143 | .0529 | .0138       |
| 52. Fasting Proglucagon-like peptide-35 | 1.641  | .1143 | .0529 | .0138       |
| 53. Fasting Proglucagon-like peptide-36 | 1.641  | .1143 | .0529 | .0138       |
| 54. Fasting Proglucagon-like peptide-37 | 1.641  | .1143 | .0529 | .0138       |
| 55. Fasting Proglucagon-like peptide-38 | 1.641  | .1143 | .0529 | .0138       |
| 56. Fasting Proglucagon-like peptide-39 | 1.641  | .1143 | .0529 | .0138       |
| 57. Fasting Proglucagon-like peptide-40 | 1.641  | .1143 | .0529 | .0138       |
| 58. Fasting Proglucagon-like peptide-41 | 1.641  | .1143 | .0529 | .0138       |
| 59. Fasting Proglucagon-like peptide-42 | 1.641  | .1143 | .0529 | .0138       |
| 60. Fasting Proglucagon-like peptide-43 | 1.641  | .1143 | .0529 | .0138       |
| 61. Fasting Proglucagon-like peptide-44 | 1.641  | .1143 | .0529 | .0138       |
| 62. Fasting Proglucagon-like peptide-45 | 1.641  | .1143 |       |             |

|        |       |       |       |       |       |       |       |       |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| 40.000 | .5874 | .3847 | .2795 | .2087 | .1641 | .1143 | .0323 | .0012 |
| 55.000 | .5734 | .7696 | .2715 | .2111 | .1582 | .0899 |       |       |

[illegible][illegible]

|         |       |       |       |       |       |        |        |        |        |        |
|---------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| 120.000 | .4804 | .3195 | .2266 | .3343 | .3567 | -.0901 | -.3996 | -.5772 | -.5861 | -.1489 |
|---------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|

[illegible][illegible]

151.000  
162.000

|         |        |        |        |        |        |
|---------|--------|--------|--------|--------|--------|
| 165.000 | -.6036 | -.6334 | -.4067 | -.3045 | -.0473 |
| 162.000 |        |        |        |        |        |
| 162.000 |        |        |        |        |        |

|         |       |       |
|---------|-------|-------|
| 169.000 | 21.22 |       |
| 169.000 |       | .7405 |

[illegible]

|         |        |       |       |       |       |        |        |        |        |        |
|---------|--------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| 174.000 | .3796  | .2878 | .2403 | .3754 | .7242 | -.7345 | -.7139 | -.3804 | -.2002 | -.0448 |
| 180 070 | 1.2905 | .5535 |       |       |       |        |        |        |        |        |

[illegible]

|          |       |       |       |       |       |       |       |       |        |        |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| 97/11/16 | .6520 | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0450 |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|

(XEB835)

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )  
AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

| ALPHA ( 4 ) = 8.038            |  | BETA ( 3 ) = 4.237    |        | MACH = 1.0987         |       | Q = 598.57            |        | P = 708.35            |        | RVL = 3.1769          |        |
|--------------------------------|--|-----------------------|--------|-----------------------|-------|-----------------------|--------|-----------------------|--------|-----------------------|--------|
| SECTION ( 1 ) ORBITER FUSELAGE |  | DEPENDENT VARIABLE CP |        | DEPENDENT VARIABLE CP |       | DEPENDENT VARIABLE CP |        | DEPENDENT VARIABLE CP |        | DEPENDENT VARIABLE CP |        |
| X/LB                           |  | .6520                 | .7290  | .7790                 | .8210 | .8790                 | .9210  | .9600                 | .9990  | 1.0180                | 1.0460 |
| PHI                            |  |                       |        |                       |       |                       |        |                       |        |                       |        |
| 70.000                         |  | -1155                 | -3478  | -3995                 | .0180 | -.0831                | -.1017 | -.1402                |        |                       |        |
| 90.000                         |  | -.0711                | -.2281 | -.2243                | .0085 | -.1589                | -.1700 | -.1586                |        |                       |        |
| 105.000                        |  |                       |        | .0436                 | .0533 | -.2539                | -.2305 | -.2588                |        |                       |        |
| 110.000                        |  |                       |        |                       |       |                       |        |                       | -4119  |                       |        |
| 120.000                        |  | -.0457                | -.1160 | .1242                 | .0802 | -.2751                | -.3305 | -.2898                | -.3432 |                       |        |
| 135.000                        |  |                       |        | .1869                 | .3478 | -.1600                | -.2601 | -.2879                |        |                       |        |
| 150.000                        |  | .0474                 | -.0354 | .2347                 | .5432 | -.1165                | -.2225 | -.2798                |        |                       |        |
| 165.000                        |  | .0684                 | .2817  | .2817                 | .0808 | -.0808                | -.1582 | -.4187                |        |                       |        |
| 180.000                        |  | .0731                 | -.0061 | .3002                 | .5322 |                       |        |                       |        |                       |        |

| ALPHA ( 4 ) = 8.037            |  | BETA ( 3 ) = 4.237    |       | MACH = 1.0987         |       | Q = 598.57            |       | P = 708.35            |       | RVL = 3.1769          |        |
|--------------------------------|--|-----------------------|-------|-----------------------|-------|-----------------------|-------|-----------------------|-------|-----------------------|--------|
| SECTION ( 1 ) ORBITER FUSELAGE |  | DEPENDENT VARIABLE CP |       | DEPENDENT VARIABLE CP |       | DEPENDENT VARIABLE CP |       | DEPENDENT VARIABLE CP |       | DEPENDENT VARIABLE CP |        |
| X/LB                           |  | .0000                 | .0080 | .0230                 | .0460 | .0700                 | .1120 | .1580                 | .1660 | .1770                 | .2040  |
| PHI                            |  |                       |       |                       |       |                       |       |                       |       |                       |        |
| 20.000                         |  | 1.2749                | .9371 | .5031                 | .3670 | .2535                 | .1398 | .1473                 | .1473 | .1122                 | .0840  |
| 40.000                         |  |                       |       | .4877                 | .3392 | .2142                 | .1614 | .1316                 | .1316 | .0741                 | .0421  |
| 55.000                         |  |                       |       | .4950                 | .3234 | .2150                 | .1447 | .1404                 | .1404 | .0421                 | .0421  |
| 70.000                         |  |                       |       | .4526                 | .2661 | .1735                 | .1447 | .1018                 | .1018 | .0421                 | .0421  |
| 90.000                         |  | .4889                 |       | .4252                 | .2351 | .1425                 | .1697 | .1110                 | .1110 | -.0735                | -.0735 |
| 120.000                        |  |                       |       | .4195                 | .2346 | .1290                 | .1948 | .1321                 | .1321 | -.0783                | -.0783 |
| 140.000                        |  |                       |       | .4050                 | .2597 | .1567                 | .2959 | .2827                 | .2827 | -.1784                | -.1784 |
| 151.000                        |  |                       |       | .3790                 | .2952 | .1851                 | .3343 | .6162                 | .6162 | -.3149                | -.3149 |
| 167.000                        |  |                       |       |                       |       |                       |       |                       |       | -.5990                | -.5990 |
| 180.000                        |  |                       |       |                       |       |                       |       |                       |       | .3257                 | .3257  |

| ALPHA ( 4 ) = 8.038            |  | BETA ( 3 ) = 4.237    |        | MACH = 1.0987         |        | Q = 598.57            |        | P = 708.35            |       | RVL = 3.1769          |        |
|--------------------------------|--|-----------------------|--------|-----------------------|--------|-----------------------|--------|-----------------------|-------|-----------------------|--------|
| SECTION ( 1 ) ORBITER FUSELAGE |  | DEPENDENT VARIABLE CP |        | DEPENDENT VARIABLE CP |        | DEPENDENT VARIABLE CP |        | DEPENDENT VARIABLE CP |       | DEPENDENT VARIABLE CP |        |
| X/LB                           |  | .6520                 | .7290  | .7790                 | .8210  | .8790                 | .9210  | .9600                 | .9990 | 1.0180                | 1.0460 |
| PHI                            |  |                       |        |                       |        |                       |        |                       |       |                       |        |
| 40.000                         |  | .2427                 | .2571  | .2006                 | .1927  | .0105                 | -.0238 | -.1469                | .4925 | .3049                 | .3049  |
| 70.000                         |  | .2570                 | .2174  | .1122                 | .1122  | -.0394                | -.0598 | -.2041                | .3250 | .1442                 | .1442  |
| 90.000                         |  | -.0895                | -.3293 | -.3393                | .0307  | -.1550                | -.2513 | -.2280                |       |                       |        |
| 105.000                        |  | -.0274                | -.2032 | -.1348                | -.0212 | -.2308                | -.2917 | -.2896                |       |                       |        |
| 120.000                        |  |                       |        | .0224                 | .0131  | -.3042                | -.3831 | -.3952                |       |                       |        |
| 135.000                        |  |                       |        | .1063                 | -.0354 | -.2451                | -.3992 | -.5145                |       |                       |        |
| 150.000                        |  | .30                   | -.0806 | .2323                 | .2894  | -.2634                | -.3543 | -.3729                |       |                       |        |
| 180.000                        |  | .0978                 | -.0042 | .2882                 | .4231  | -.1965                | -.3183 | -.3782                |       |                       |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEBB-5)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 8.037 BETA ( 3 ) = 4.237

## SECTION ( 1108B ) ITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 .0978 .2768  
180.000 .0754 .0106 .2585 .4864 .0081 -.2617 -.410C

ALPHA ( 5 ) = 11.975 BETA ( 1 ) = -3.842 MACH = 1.088 Q = 598.75 P = 708.59 RAVL = 3.1753

## SECTION ( 1108B ) ITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .158C .1680 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.2323 1.0555 .6362 .4696 .3522 .2555 .2054 .2094 .1845 .1285 .1116 .1163 .0958 .2097  
20.000 .6804 .4907 .3562 .2555 .2132  
40.000 .7480 .5304 .4107 .3229 .2550  
55.000 .7031 .4971 .3786 .2871 .2210  
70.000 .6303 .4353 .3133 .2857 .2271  
90.000 .5720 .3852 .2883 .2845 .2479  
120.000 .4439 .2805 .1821 .2918 .3976  
140.000 .3154 .2158 .1337 .3041 .7501  
150.000  
151.000  
162.000  
165.000  
169.000  
174.000  
180.0001.2323 .4132 .2350 .2215 .1455 .3098 .8061 .7585  
X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .3196 .3272 .2662 .1635 .0877 .0090 -.087E  
40.000 .3473 .2946 .1859 .0218 .0074 -.1624  
70.000 .1472 -.3835 -.4668 -.0305 -.0770 -.2322 -.2130  
90.000 .0720 -.2933 -.3892 -.0030 -.0939 -.2047 -.3366  
105.000 -.1134 .0845 -.1423 -.2575 -.3426  
110.000  
120.000 -.1867 -.1957 .0542 .1136 -.1919 -.2642 -.227E  
135.000 .0707 .2942 .2048 -.2038 -.2426  
150.000 -.0569 -.1798 .0689 .4414 -.1390 -.2047 -.285  
165.000 .0469 .1599 .0892 -.0941 -.4474  
180.000 .0766 -.0407 .2350 .5064  
-4103  
-3761

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORR FUSELAGE

(XE8835)

ALPHA ( 5 ) = 11.986 BETA ( 2 ) = .188 MACH = 1.0987 Q = 598.75 P = 708.59 RN/L = 3.1753

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|--------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|
| PHI     | .000   | 1.2368 | 1.0594 | .6419 | .4763 | .3562 | .2480 | .2124 | .1942  | .1385  | .1150 | .1197 | .1032 | .1984 |       |
| 20.000  |        |        |        | .6530 | .4699 | .3364 | .2480 | .2095 | .1797  | .1022  | .0817 | .0989 | .0755 | .2216 |       |
| 40.000  |        |        |        | .6580 | .4659 | .3532 | .2674 | .2225 | .1738  |        |       |       |       |       |       |
| 55.000  |        |        |        | .5782 | .3799 | .2709 | .1970 | .1516 | .1263  |        |       |       |       |       |       |
| 70.000  |        |        |        | .5110 | .3244 | .2059 | .1773 | .1663 | .1090  |        |       |       |       |       |       |
| 90.000  |        | .5676  |        | .4694 | .2938 | .1837 | .2261 | .1930 | .0461  |        |       |       |       |       |       |
| 120.000 |        |        |        | .3875 | .2371 | .1360 | .2911 | .3568 | -.0622 |        |       |       |       |       |       |
| 140.000 |        |        |        |       |       |       |       |       | -.1875 |        |       |       |       |       |       |
| 150.000 |        |        |        | .2964 | .2267 | .1161 | .3117 | .6762 | -.4734 |        |       |       |       |       |       |
| 151.000 |        |        |        |       |       |       |       |       | .4046  |        |       |       |       |       |       |
| 162.000 |        |        |        |       |       |       |       |       | .4294  |        |       |       |       |       |       |
| 165.000 |        |        |        |       |       |       |       |       |        |        |       |       |       |       |       |
| 169.000 |        |        |        |       |       |       |       |       |        |        |       |       |       |       |       |
| 174.000 |        |        |        |       |       |       |       |       |        |        |       |       |       |       |       |
| 180.000 | 1.2368 | .4026  | .2599  | .1950 | .1459 | .3263 | .7672 | .7045 |        |        |       |       |       |       |       |
| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |

PHI

| X/LB    | .000  | .3367  | .3327 | .2783 | .1759  | .1236  | .0165  | .0863  |  |  |  |  |  |  |  |
|---------|-------|--------|-------|-------|--------|--------|--------|--------|--|--|--|--|--|--|--|
| 40.000  |       |        |       | .2998 | .1984  | .0460  | .0222  | -.1542 |  |  |  |  |  |  |  |
| 70.000  |       |        |       | .5011 | .1495  | -.1793 | -.1940 | -.1732 |  |  |  |  |  |  |  |
| 90.000  |       |        |       | .3874 | .0916  | -.1540 | -.2209 | -.2249 |  |  |  |  |  |  |  |
| 105.000 |       |        |       | .1303 | .0058  | -.3204 | -.3325 | -.3603 |  |  |  |  |  |  |  |
| 110.000 |       |        |       |       |        |        |        |        |  |  |  |  |  |  |  |
| 120.000 |       |        |       | .0468 | .0891  | -.3108 | -.3044 | -.3625 |  |  |  |  |  |  |  |
| 130.000 |       |        |       | .1176 | .3192  | -.2293 | -.2927 | -.3113 |  |  |  |  |  |  |  |
| 150.000 |       |        |       | .0380 | -.0946 | .1585  | .5471  | -.2939 |  |  |  |  |  |  |  |
| 165.000 |       |        |       | .0878 | .2392  | .0512  | -.2035 | -.4286 |  |  |  |  |  |  |  |
| 180.000 | .0976 | -.0054 |       | .5649 | .5669  |        |        |        |  |  |  |  |  |  |  |

ALPHA ( 5 ) = 11.981 BETA ( 3 ) = .4246 MACH = 1.0987 Q = 598.75 P = 708.59 RN/L = 3.1753

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230  | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|--------|--------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|
| PHI     | .000  | 1.2211 | 1.0421 | .6298 | .4691 | .3432 | .2165 | .2071 | .1763  | .1342 | .1131 | .1172 | .0991 | .1759 |       |
| 20.000  |       |        |        | .6026 | .4276 | .3080 | .2165 | .1859 | .1453  |       |       |       |       |       |       |
| 40.000  |       |        |        | .5507 | .3834 | .2791 | .1923 | .1729 | .1160  |       |       |       |       |       |       |
| 55.000  |       |        |        |       | .4509 | .2693 | .1676 | .0982 | .0794  |       |       |       |       |       |       |
| 70.000  |       |        |        | .3957 | .2177 | .1106 | .1469 | .1121 | .0690  |       |       |       |       |       |       |
| 90.000  |       | .4180  |        | .3749 | .2023 | .0898 | .1654 | .1417 | -.0148 |       |       |       |       |       |       |
| 120.000 |       |        |        | .3285 | .1893 | .0705 | .2676 | .3007 | -.1442 |       |       |       |       |       |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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ALPHA ( 5 ) = 11.981 BETA ( 3 ) = 4.2

AMES 11-073(0A148) - 140A/B/C/R ORB FUSELAGE

(XE8835)

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 1.2211  | .3811 | .2618 | .2267 | .1291 | .3171 | .7525 |       |       |       |       |       |       |       |       |       |
| .6520   | .7290 | .7790 | .8210 | .8790 | .9210 | .9800 |       |       |       |       |       |       |       |       |       |
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| .000    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 105.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 110.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 135.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

-.2902

-.5920

.3187

.3596

-.6504

-.6938

-.7642

-.6852

1.0460

.5572

.3337

.3763

.1641

.5903

.6799

.6849

.9990

1.0180

.4960

.4737

.1087

.1746

.2071

.2597

.3515

.5891

.4014

.4077

.4183

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(XE8838) ( 05 AUG 75 )

## PARAMETRIC DATA

|          |        |          |        |
|----------|--------|----------|--------|
| RUDDER = | 10.000 | SPDRK =  | 35.000 |
| BOFLAP = | 16.300 | L-ELVN = | .000   |
| R-ELVN = | 10.000 | MACH     | .900   |

|          |      |          |
|----------|------|----------|
| • 1056.6 | RN/L | • 3.5906 |
|----------|------|----------|

## DEPENDENT VARIABLE CP

|    |       |       |       |       |       |
|----|-------|-------|-------|-------|-------|
| 40 | .2510 | .3010 | .3780 | .4970 | .5740 |
|----|-------|-------|-------|-------|-------|

|        |        |        |        |        |        |
|--------|--------|--------|--------|--------|--------|
| -.2140 | -.1839 | -.0715 | -.0352 | .0051  | -.0141 |
| -.2517 |        |        |        |        |        |
| -.4354 |        |        |        |        |        |
| -.2847 | -.3991 | -.1265 | -.0853 | -.0377 | -.0435 |
| -.2293 | -.7177 | -.3208 | .0578  | .1074  |        |
| -.3042 | -.6941 | -.0554 | .0432  | .0935  |        |
| -.2331 | -.5764 | -.1093 | .0293  | .0650  |        |
| -.1599 |        |        |        |        |        |
| -.2743 | -.6526 | -.0587 | .0232  | .0480  |        |
| .3303  |        |        |        |        |        |
| .3891  |        |        |        |        |        |
| -.8300 | -.7704 | -.0257 | .0145  | .0412  |        |
| -.9367 | -.7602 | -.0201 | .0098  | .0317  |        |

**1.0180 1.0460**

-.3469  
-.2572

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8836)

ALPHA ( 1 ) = -4.055 BETA ( 2 ) = .194 MACH = .90163 Q = 601.33 P = 1056.6 RN/L = 3.5806

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000   | 1.1972 | .3566  | -.0683 | -.1027 | -.1750 |       | -.2115 | -.2285 | -.1849 | -.0638 | -.0241 | .0166  | -.0114 |       |
| 20.000  |        |        | -.0554 | -.1234 | -.2186 | -.2254 |       | -.2424 | -.2518 | -.3775 | -.0738 | -.0386 | -.0072 | -.0144 |       |
| 40.000  |        |        | .0975  | -.1150 | -.1981 | -.2154 |       | -.3055 | -.3775 | -.3347 |        |        |        |        |       |
| 55.000  |        |        | .2426  | .0141  | -.0651 | -.1343 |       | -.2334 | -.3436 |        |        |        |        |        |       |
| 70.000  |        |        | .3467  | .1099  | .0273  | -.0215 |       | -.1762 | -.3229 | -.7609 | -.0490 | .0459  | .0892  |        |       |
| 90.000  |        | .5835  | .4264  | .1841  | .0974  | .0108  |       | -.1701 | -.4538 | -.7230 | -.1174 | .0363  | .0720  |        |       |
| 120.000 |        |        | .5336  | .3527  | .2246  | .2323  |       | .0609  | -.4251 | -.6672 | -.1987 | .0147  | .0472  |        |       |
| 140.000 |        |        | .5874  | .4630  | .3560  | .3722  |       | .5791  | -.7918 | -.8280 | -.0481 | .0229  | .0446  |        |       |
| 162.000 |        |        |        |        |        |        |       | .2305  | -.8379 | -.7341 | -.0171 | .0248  | .0446  |        |       |
| 165.000 |        |        |        |        |        |        |       | .3119  | -.9436 | -.7205 | -.0081 | .0262  | .0430  |        |       |
| 169.000 |        |        |        |        |        |        |       | .6863  |        |        |        |        |        |        |       |
| 174.000 |        |        |        |        |        |        | .8146 | .6769  |        |        |        |        |        |        |       |
| 180.000 | 1.1972 | .8342  | .5979  | .4771  | .3995  | .4240  | .9800 | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9310  | .9800 |        |        |        |        |        |        |        |       |

PHI

| X/LB    | .000  | .1216  | -.1907 | -.2239 | -.3361 | -.2448 | -.1796 | -.0088 | .3340 | .1220 | .0307 |
|---------|-------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|
| 40.000  |       | -.1877 | -.2246 | -.3333 | -.2838 | -.2838 | -.1565 | -.6417 |       |       |       |
| 70.000  |       | .0176  | -.0518 | .0331  | .1044  | -.1601 | -.0778 | -.1042 |       |       |       |
| 90.000  |       | .0448  | .0067  | .0935  | .1285  | -.2365 | -.1412 | -.1442 |       |       |       |
| 105.000 |       |        | .1554  | .1554  | .1403  | -.3976 | -.1951 | -.1950 |       |       |       |
| 110.000 |       |        |        |        |        |        |        | -.3520 |       |       |       |
| 120.000 | .0623 | .0753  | .2230  | .2384  | .2384  | -.5027 | -.3140 | -.2660 |       |       |       |
| 135.000 |       |        | .3122  | .4548  | -.3416 | -.2081 | -.2020 | -.2824 |       |       |       |
| 150.000 | .0759 | .1356  | .3327  | .5194  | -.2269 | -.2111 | -.1960 |        |       |       |       |
| 165.000 | .0794 | .3330  | .3330  |        | -.0216 | -.1716 | -.2973 |        |       |       |       |
| 180.000 | .0739 | .1474  | .3391  | .5383  |        |        |        |        |       |       |       |

ALPHA ( 1 ) = -4.060 BETA ( 3 ) = 4.272 MACH = .90163 Q = 601.33 P = 1056.6 RN/L = 3.5806

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230  | .0460  | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|--------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | 1.1781 | .3349  | -.0800 | -.1063 | -.1810 |       | -.2101 | -.2453 | -.2017 | -.0748 | -.0317 | .0052  | -.0183 |       |
| 20.000  |       |        | -.0760 | -.1325 | -.2144 | -.2192 |       | -.2454 | -.2454 | -.3030 | -.0494 | -.0141 | -.0009 | .0076  |       |
| 40.000  |       |        | .0362  | .1412  | -.1946 | -.1993 |       | -.2664 | -.3258 | -.3030 |        |        |        |        |       |
| 55.000  |       |        | .1423  | .0591  | -.1222 | -.1628 |       | -.3878 | -.3878 | -.3030 |        |        |        |        |       |
| 70.000  |       |        | .2231  | .0007  | .0448  | -.0945 |       | -.3984 | -.3984 | -.6409 | -.0882 | .0495  | .0747  |        |       |
| 90.000  |       | .4231  | .5002  | .0561  | -.0181 | -.0848 |       | -.5883 | -.5883 | -.7469 | -.2209 | .0471  | .0650  |        |       |
| 120.000 |       |        | .4209  | .2298  | .1027  | .1214  |       | -.0627 | -.5885 | -.8131 | -.2677 | -.0138 | .0202  |        |       |



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -150A/B/C/R ORB FUSELAGE

(XEB838)

ALPHA ( 2 ) = .042 BETA ( 1 ) = -3.866

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

|         |        |        |        |        |        |        |        |       |         |        |        |       |       |       |       |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|---------|--------|--------|-------|-------|-------|-------|
| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660 | .1770   | .2040  | .2510  | .3010 | .3780 | .4870 | .5740 |
| PHI     |        |        |        |        |        |        |        |       |         |        |        |       |       |       |       |
| 180.000 | 1.2068 | .7105  | .4605  | .3619  | .2824  | .3329  |        | .5888 | -1.0439 | -.8538 | -.0675 | .0158 | .0077 |       |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990 | 1.0180  | 1.0460 |        |       |       |       |       |
| PHI     |        |        |        |        |        |        |        |       |         |        |        |       |       |       |       |
| .000    | -.0245 | -.0732 | -.1396 | -.2595 | -.2155 | -.1821 | -.0113 |       | .3048   | .1053  |        |       |       |       |       |
| 40.000  | -.0814 | -.1252 | -.1252 | -.2503 | -.2790 | -.1464 | -.0812 |       | .2001   | .0391  |        |       |       |       |       |
| 70.000  | -.1042 | -.2110 | .0028  | .1535  | -.0512 | .0021  | -.0511 |       |         |        |        |       |       |       |       |
| 90.000  | -.0607 | -.1289 | .0711  | .1798  | -.1116 | -.0590 | -.1067 |       |         |        |        |       |       |       |       |
| 105.000 |        | .1442  | .2316  | -.2144 | -.1143 | -.1451 |        |       |         |        |        |       |       |       |       |
| 110.000 |        |        |        |        |        |        |        |       |         |        |        |       |       |       |       |
| 120.000 | -.0498 | -.0153 | .2541  | .2912  | -.3220 | -.1840 | -.1662 |       |         |        |        |       |       |       |       |
| 135.000 |        |        | .3174  | .3607  | -.2588 | -.1280 | -.1541 |       |         |        |        |       |       |       |       |
| 150.000 | -.0071 | .0752  | .3131  | .3006  | -.1850 | -.1087 | -.1690 |       |         |        |        |       |       |       |       |
| 165.000 | .0016  | .2874  | .2874  | .0543  | -.0954 | -.3024 |        |       |         |        |        |       |       |       |       |
| 180.000 | .0000  | .0808  | .2726  | .4036  |        |        |        |       |         |        |        |       |       |       |       |

ALPHA ( 2 ) = .092 BETA ( 2 ) = .183 MACH = .90027 Q = 600.18 P = 1057.8 RV/L = 3.5774

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

|         |        |        |        |        |        |        |        |        |        |        |        |        |       |       |       |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|
| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780 | .4870 | .5740 |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |       |       |       |
| .000    | 1.2101 | .5241  | .0804  | .0008  | -.0790 |        |        | -.1492 | -.1636 | -.1806 | -.0612 | -.0103 | .0326 | .0358 |       |
| 20.000  |        |        | .0385  | .0081  | -.1065 | -.1438 |        | -.1675 | -.1789 | -.2157 | -.0537 | -.0028 | .0203 | .0516 |       |
| 40.000  |        |        | .2347  | .0152  | -.0743 | -.1128 |        | -.1817 | -.2157 | -.2740 |        |        |       |       |       |
| 55.000  |        |        | .3321  | .1193  | .0312  |        |        | -.1390 | -.2334 |        |        |        |       |       |       |
| 70.000  |        |        | .3835  | .1504  | .0485  | .0291  |        | -.1124 | -.2528 | -.7218 | -.0881 | .0106  | .0429 |       |       |
| 90.000  | .5724  |        | .4293  | .2027  | .0894  | .0576  |        | -.1035 | -.3703 | -.7051 | -.1187 | .0104  | .0383 |       |       |
| 120.000 |        |        | .4795  | .3080  | .1907  | .2197  |        | .0965  | -.4014 | -.6812 | -.1936 | .0137  | .0251 |       |       |
| 140.000 |        |        | .4888  | .3706  | .2663  | .3099  |        | .5445  | -.4861 | -.8431 | -.1411 | .0250  | .0188 |       |       |
| 150.000 |        |        |        |        |        |        |        |        | .2044  |        |        |        |       |       |       |
| 151.000 |        |        |        |        |        |        |        |        | .2731  |        |        |        |       |       |       |
| 162.000 |        |        |        |        |        |        |        | .6450  |        | -.9134 | -.8561 | -.0551 | .0224 | .0200 |       |
| 165.000 |        |        |        |        |        |        |        |        |        |        |        |        |       |       |       |
| 169.000 |        |        |        |        |        |        |        |        |        |        |        |        |       |       |       |
| 174.000 |        |        |        |        |        |        |        |        |        |        |        |        |       |       |       |
| 180.000 | 1.2101 | .7057  | .4725  | .3735  | .2917  | .3443  | .7681  | .6248  | -.9313 | -.8483 | -.0358 | .0238  | .0183 |       |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |       |       |       |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |       |       |       |
| .000    | -.0201 | -.0696 | -.1423 | -.2515 | -.2012 | -.1873 | -.0048 |        | .3284  | .1111  |        |        |       |       |       |
| 40.000  | -.0560 | -.1281 | -.2416 | -.2463 | -.1609 | -.0504 |        |        | .1968  | .0268  |        |        |       |       |       |

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 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB836)

ALPHA ( 2 ) = .092 BETA ( 2 ) = .183

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9980  | 1.0180 | 1.0480 |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |       |        |        |        |        |        |        |
| 70.000  | -.1168 | -.2148 | -.0430 | .0841 | -.1742 | -.0652 | -.0880 |        |        |        |
| 90.000  | -.0685 | -.1326 | .0326  | .0995 | -.2510 | -.1292 | -.1367 |        |        |        |
| 105.000 |        |        | .0983  | .1316 | -.4026 | -.1790 | -.1820 |        |        |        |
| 110.000 |        |        |        |       |        |        |        | -.3253 |        |        |
| 120.000 | -.0233 | -.0076 | .1750  | .2442 | -.4858 | -.2713 | -.2309 | -.2602 |        |        |
| 135.000 |        |        | .2468  | .4037 | -.3752 | -.2180 | -.2065 |        |        |        |
| 150.000 | .0105  | .0643  | .2724  | .4528 | -.2896 | -.2347 | -.2039 |        |        |        |
| 165.000 | .0082  | .0707  | .2707  | .4528 | -.0961 | -.2256 | -.2788 |        |        |        |
| 180.000 | .0077  | .0797  | .2771  | .4671 |        |        |        |        |        |        |

ALPHA ( 2 ) = .085 BETA ( 3 ) = .4248 MACH = .90027 Q = 600.16 P = 1057.8 RN/L = 3.5774

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460  | .0700  | .1120  | .1580 | .1660  | .1770   | .2040  | .2510  | .3010  | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|--------|--------|--------|-------|--------|---------|--------|--------|--------|-------|-------|-------|
| PHI     |        |       |       |        |        |        |       |        |         |        |        |        |       |       |       |
| 20.000  | 1.1951 | .5033 | .0595 | -.0068 | -.0951 | -.1453 |       | -.1565 | -.1711  | -.1864 | -.0769 | -.0186 | .0274 | .0271 |       |
| 40.000  |        |       | .0671 | -.0282 | -.1260 | -.1162 |       | -.1671 | -.1869  | -.2802 | -.0506 | .0017  | .0220 | .0566 |       |
| 55.000  |        |       | .1533 | -.0205 | -.1043 | -.0775 |       | -.1796 | -.2117  |        |        |        |       |       |       |
| 70.000  |        |       | .2211 | .0275  | -.0409 | -.0775 |       | -.1839 | -.2712  |        |        |        |       |       |       |
| 90.000  |        | .4135 | .2629 | .0487  | -.0246 | -.0308 |       | -.1766 | -.3255  | -.7774 | -.0912 | .0093  | .0338 | .0315 |       |
| 120.000 |        |       | .3063 | .0843  | .0246  | -.0308 |       | -.1859 | -.4934  | -.7843 | -.1572 | .0168  | .0168 | .0165 |       |
| 140.000 |        |       | .3785 | .2054  | .0895  | .1291  |       | -.0209 | -.5938  | -.7848 | -.2126 | .0116  | .0116 | .0165 |       |
| 150.000 |        |       | .4260 | .3221  | .2149  | .2536  |       | .4558  | -.7531  | -.9644 | -.1249 | .0135  | .0063 | .0063 |       |
| 162.000 |        |       |       |        |        |        |       |        | .0940   | -.9186 |        |        |       |       |       |
| 169.000 |        |       |       |        |        |        |       |        | .1824   | -.8747 | -.8648 | -.0659 | .0116 | .0056 |       |
| 174.000 |        |       |       |        |        |        |       |        |         |        |        |        |       |       |       |
| 180.000 | 1.1951 | .6791 | .4715 | .3575  | .2861  | .3357  | .7109 | .6110  | -1.0594 | -.8706 | -.0577 | .0116  | .0009 |       |       |
| X/LB    | .6520  | .7290 | .7790 | .8210  | .8790  | .9210  | .9600 | .9990  | 1.0180  | 1.0460 |        |        |       |       |       |

|         |        |        |        |        |        |        |        |        |  |  |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--|--|--|--|--|--|--|
| PHI     |        |        |        |        |        |        |        |        |  |  |  |  |  |  |  |
| 40.000  | -.0269 | -.0731 | -.1391 | -.2490 | -.2189 | -.2010 | -.0055 |        |  |  |  |  |  |  |  |
| 70.000  | -.0392 | -.1255 | -.0677 | -.2361 | -.2681 | -.1991 | -.0239 |        |  |  |  |  |  |  |  |
| 90.000  | -.1219 | -.1969 | -.0677 | .0260  | .3066  | .1727  | -.1331 |        |  |  |  |  |  |  |  |
| 105.000 | -.0638 | -.1236 | -.0003 | .0356  | .3868  | .2521  | -.1680 |        |  |  |  |  |  |  |  |
| 120.000 |        |        | .0608  | .0428  | .5188  | .3308  | -.1974 |        |  |  |  |  |  |  |  |
| 135.000 |        |        |        |        |        |        |        | -.3393 |  |  |  |  |  |  |  |
| 150.000 | -.0247 | -.0303 | .1163  | .0957  | -.6411 | -.6100 | -.2397 | -.2784 |  |  |  |  |  |  |  |
|         | .0019  | .0497  | .2422  | .3307  | .5333  | -.5191 | -.1776 |        |  |  |  |  |  |  |  |
|         |        |        |        | .4230  | -.4064 | -.4820 | -.2141 |        |  |  |  |  |  |  |  |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XE8836)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = .085 BETA ( 3 ) = 4.248

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9890 1.0180 1.0460

PHI

165.000 -.0043 .2461  
180.000 -.0098 .0726 .2696 .4121  
-.1910 -.4144 -.2695

ALPHA ( 3 ) = 3.973 BETA ( 1 ) = -3.973 MACH = .89927 Q = 599.24 P = 1059.5 RN/L = 3.5740

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.1941 .6658 .2189 .0994 .0118  
20.000 .2594 .1120 -.0046 -.0659  
40.000 .4173 .1751 .0634 -.0045  
55.000 .4995 .2795 .1770 .0950  
70.000 .5158 .2969 .1888 .1354  
90.000 .5241 .3120 .1980 .1611  
120.000 .4965 .3261 .2215 .2594  
140.000 .4159 .2941 .1982 .2711  
150.000  
162.000  
165.000  
169.000  
174.000  
180.000.2785  
.3063

-.9611 -.8101 -.4059 .0346 -.0105

-1.0939 -.9235 -.2676 .0401 -.0007

1.0460

PHI

.000 .0574 .0118 -.0620 -.1794 -.1797 -.1818 -.0093  
40.000 .0366 -.0464 -.1736 -.2093 -.1717 -.0935  
70.000 -.2139 -.4404 .1333 -.0268 .0125 -.0363  
90.000 .1656 -.3385 .0127 .1456 .0837 .0498 .0972  
105.000 .1035 .1734 .1778 .1040 .1419  
110.000  
120.000 .2247 .1618 .3258 .1705 .1550  
135.000 .2692 .2330 .2921 .1480 .1681  
150.000 .0809 .0057 .2528 .1764 .1824  
165.000 .0653 .2260 .0113 .1258 .2870  
180.000 .0625 .2034 .3485.3563 .1233  
.2379 .0507-.3395  
-.2556REPRODUCIBILITY OF THIS  
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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-07310A148) -140A/B/C/R ORB FUSELAGE (XE8836)

ALPHA ( 3 ) = 3.981 BETA ( 2 ) = .185 MACH = .89927 Q = 599.24 P = 1058.5 RN/L = 3.5740

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770  | .2040   | .2510   | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|--------|---------|---------|--------|--------|--------|-------|
| PHI     | .000   | .6586 | .2233 | .1071 | .0157  |        |       | -.0882 |        | -.1057  | -.1229  | -.0493 | .0152  | .0713  | .0914 |
| 20.000  |        |       | .2381 | .1025 | -.0363 | -.0589 |       | -.0946 |        | -.1130  | -.1874  | -.0511 | .0215  | .0590  | .1169 |
| 40.000  |        |       | .3437 | .1315 | .0360  | -.0134 |       | -.0882 |        | -.1303  |         |        |        |        |       |
| 55.000  |        |       | .3910 | .1822 | .0933  | .0290  |       | -.0713 |        | -.1574  |         |        |        |        |       |
| 70.000  |        |       | .3981 | .1851 | .0893  | .0574  |       | -.0727 |        | -.1964  | -.6509  | -.1440 | -.0315 | .0133  |       |
| 90.000  | .5381  |       | .4101 | .2028 | .0975  | .0784  |       | -.0576 |        | -.3093  | -.7104  | -.1706 | -.0193 | .0088  |       |
| 120.000 |        |       | .4155 | .2488 | .1459  | .1989  |       | .1185  |        | -.3820  | -.5868  | -.2739 | -.0169 | -.0143 |       |
| 140.000 |        |       |       |       |        |        |       |        |        | -.5010  |         |        |        |        |       |
| 150.000 |        |       | .3853 | .2771 | .1796  | .2506  |       | .5186  |        | -.8739  | -1.0318 | -.3658 | .0437  | .0018  |       |
| 162.000 |        |       |       |       |        |        |       |        | .1886  |         |         |        |        |        |       |
| 165.000 |        |       |       |       |        |        |       |        | .2409  |         |         |        |        |        |       |
| 169.000 |        |       |       |       |        |        |       |        |        | -.9709  | -.9348  | -.2329 | .0404  | .0103  |       |
| 174.000 |        |       |       |       |        |        |       |        |        |         |         |        |        |        |       |
| 180.000 | 1.2010 | .5630 | .3610 | .2599 | .1959  | .2747  | .7184 | .5781  |        | -1.0066 | -.9383  | -.1676 | .0373  | .0086  |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790  | .9210  | .9600 | .9990  | 1.0180 | 1.0460  |         |        |        |        |       |

PHI

|         |        |        |        |        |        |        |        |        |  |       |       |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--|-------|-------|--|--|--|--|
| .000    | .0605  | .0164  | -.0631 | -.1705 | -.1721 | -.2011 | .0003  |        |  |       |       |  |  |  |  |
| 40.000  | .0490  |        | -.0463 | -.1650 | -.2120 | -.1813 | -.0575 |        |  | .3585 | .1200 |  |  |  |  |
| 70.000  | -.2253 | -.4401 | -.1065 | .0576  | -.1364 | -.0555 | -.0802 |        |  | .2253 | .0313 |  |  |  |  |
| 90.000  | -.1725 | -.3261 | -.0262 | .0610  | -.2269 | -.1141 | -.1241 |        |  |       |       |  |  |  |  |
| 105.000 |        |        | .0524  | .0680  | -.3541 | -.1686 | -.1729 |        |  |       |       |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        | -.3224 |  |       |       |  |  |  |  |
| 120.000 | -.1195 | -.1337 | .1176  | .1787  | -.5008 | -.2528 | -.2122 | -.2495 |  |       |       |  |  |  |  |
| 135.000 |        |        | .1780  | .3830  | -.4135 | -.2247 | -.2128 |        |  |       |       |  |  |  |  |
| 150.000 | -.0610 | -.0192 | .1929  | .4846  | -.3172 | -.2437 | -.2210 |        |  |       |       |  |  |  |  |
| 165.000 | -.0473 |        | .2023  |        | -.1350 | -.2485 | -.2695 |        |  |       |       |  |  |  |  |
| 180.000 | -.0556 | .0041  | .2100  | .4249  |        |        |        |        |  |       |       |  |  |  |  |

ALPHA ( 3 ) = 3.986 BETA ( 3 ) = 4.242 MACH = .89927 Q = 599.24 P = 1058.5 RN/L = 3.5740

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770 | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|-------|-------|-------|-------|--------|--------|-------|--------|-------|--------|--------|--------|--------|-------|-------|
| PHI     | .000  | .6531 | .2087 | .1025 | .0054  |        |       | -.0946 |       | -.1102 | -.1220 | -.0676 | .0055  | .0650 | .0833 |
| 20.000  |       |       | .2014 | .0795 | -.0255 | -.0687 |       | -.1007 |       | -.1286 |        |        |        |       |       |
| 40.000  |       |       | .2551 | .0875 | -.0045 | -.0417 |       | -.0981 |       | -.1421 | -.2156 | -.0860 | .0096  | .0443 | .1125 |
| 55.000  |       |       | .2756 | .0896 | .0084  | -.0289 |       | -.1257 |       | -.1986 |        |        |        |       |       |
| 70.000  |       |       | .2803 | .0771 | -.0039 | -.0039 |       | -.1354 |       | -.2567 | -.7237 | -.1424 | -.0310 | .0027 |       |
| 90.000  | .3827 |       | .2976 | .0927 | .0025  | .0086  |       | -.1319 |       | -.4032 | -.7913 | -.1601 | -.0081 | .0087 |       |
| 120.000 |       |       | .3219 | .1668 | .0649  | .1247  |       | .0185  |       | -.5162 | -.7774 | -.2713 | .0181  | .0057 |       |

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## TABULATED PRESSURE DATA - 0A148 (AVES 11-073-1)

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(XEB838)

ALPHA (3) = 3.906 BETA (3) = 4.242

AVES 11-073(0A148) - 140A/B/C/R ORB FUSELAGE

## SECTION (1) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| X/LB    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

PHI

140.000

150.000

151.000

162.000

165.000

169.000

174.000

180.000

PHI

140.000

150.000

151.000

162.000

165.000

169.000

174.000

180.000

PHI

140.000

150.000

151.000

162.000

165.000

169.000

174.000

180.000

ALPHA (4) = 8.050 BETA (1) = -3.862 MACH = .89970 Q = 599.92 P = 1059.7 RN/L = 3.5761

## SECTION (1) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| X/LB    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

.6896

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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ALPHA ( 4 ) = 8.050 BETA ( 1 ) = -3.862

(XEB836)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     | .000   | .0965  | .0160  | -.0970 | -.1382 | -.1862 | -.0034 |       | .3988 | .1336 |       |       |       |       |       |
| 20.000  | .1473  |        | .0353  | -.0843 | -.1898 | -.1765 | -.0909 |       | .2676 | .0542 |       |       |       |       |       |
| 40.000  | -.3055 | -.5694 | -.1106 | -.0994 | -.0722 | -.0410 | -.0639 |       |       |       |       |       |       |       |       |
| 60.000  | -.2504 | -.4827 | -.0389 | .0775  | -.1128 | -.1076 | -.1276 |       |       |       |       |       |       |       |       |
| 80.000  |        |        | .0670  | .0906  | -.1835 | -.1512 | -.1733 |       |       |       |       |       |       |       |       |
| 100.000 |        |        |        |        |        |        |        |       |       |       |       |       |       |       |       |
| 120.000 | -.3094 | -.2371 | .0994  | .0698  | -.3143 | -.2154 | -.1824 |       |       |       |       |       |       |       |       |
| 140.000 |        |        | .1094  | .2024  | -.3182 | -.1886 | -.2047 |       |       |       |       |       |       |       |       |
| 160.000 | -.1466 | -.1069 | .1041  | .2645  | -.2781 | -.1805 | -.2153 |       |       |       |       |       |       |       |       |
| 180.000 | -.1302 |        | .0933  |        | -.0519 | -.1452 | -.2915 |       |       |       |       |       |       |       |       |
| PHI     | -.1170 | .0741  | .0959  | .2972  |        |        |        |       |       |       |       |       |       |       |       |

ALPHA ( 4 ) = 8.064 BETA ( 2 ) = .184 MACH = .89970 Q = 599.92 P = 1058.7 RAVL = 3.5781

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460  | .0700  | .1120  | .1580  | .1660  | .1770 | .2040    | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|--------|--------|--------|--------|--------|-------|----------|--------|--------|--------|--------|-------|
| PHI     |        | .8120 | .3703 | .2311  | .1266  |        |        | -.0042 |       | -.0287   | -.0504 | -.0137 | .0488  | .1275  | .1571 |
| 20.000  | 1.1639 |       | .3899 | .2260  | .1083  | .0393  |        | -.0084 |       | -.0450   |        |        |        |        |       |
| 40.000  |        |       | .4469 | .2472  | .1415  | .0728  |        | -.0036 |       | -.0349   | -.1004 | -.0463 | .0559  | .1105  | .1865 |
| 60.000  |        |       | .4330 | .2343  | .1346  | .0663  |        | -.0298 |       | -.1070   |        |        |        |        |       |
| 80.000  |        |       | .4000 | .1992  | .0970  | .0778  |        | -.0343 |       | -.1499   | -.5798 | -.2317 | -.0924 | -.0126 |       |
| 100.000 |        | .4908 | .3863 | .1916  | .0934  | .0903  |        | -.0202 |       | -.2487   | -.6833 | -.2654 | -.0893 | -.0182 |       |
| 120.000 |        |       | .3368 | .1846  | .0944  | .1685  |        | .1388  |       | -.3560   | -.7106 | -.3325 | -.1138 | -.0369 |       |
| 140.000 |        |       |       |        |        |        |        | -.4377 |       | -.9229   | -.6342 | -.4582 | -.0540 | -.0142 |       |
| 160.000 |        |       | .2713 | .1879  | .0995  | .1935  |        | .5009  |       | .1765    |        |        |        |        |       |
| 180.000 |        |       |       |        |        |        |        | .2088  |       |          |        |        |        |        |       |
| PHI     |        |       |       |        |        |        |        |        |       |          |        |        |        |        |       |
| 20.000  | 1.1639 | .4057 | .2357 | .1605  | .1104  | .2142  |        | .5328  |       | -.1.0334 | -.6482 | -.4553 | .0265  | .0060  |       |
| 40.000  |        |       |       |        |        |        |        |        |       |          |        |        |        |        |       |
| 60.000  |        |       |       |        |        |        |        |        |       |          |        |        |        |        |       |
| 80.000  |        |       |       |        |        |        |        |        |       |          |        |        |        |        |       |
| 100.000 |        |       |       |        |        |        |        |        |       |          |        |        |        |        |       |
| PHI     |        |       |       |        |        |        |        |        |       |          |        |        |        |        |       |
| 20.000  | .1500  | .1053 | .0255 | -.0877 | -.1313 | -.1837 | -.0059 | .3957  | .1309 |          |        |        |        |        |       |
| 40.000  | .1548  |       | .0422 | -.0738 | -.1877 | -.1710 | -.0594 | .2465  | .0311 |          |        |        |        |        |       |

(XE8836)

AVES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 8.064 BETA ( 2 ) = .184

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

70.000 -.3122 -.6283 -.1788 .0293 -.1684 -.1043 -.1069  
 90.000 -.2501 -.4721 -.1008 .0224 -.2600 -.1557 -.1440  
 105.000 .0069 .0234 -.3506 -.2060 -.2008  
 110.000  
 120.000 -.2125 -.2414 .0184 .0803 -.4600 -.2609 -.2275  
 135.000 .0884 .3050 -.4261 -.2556 -.2366  
 150.000 -.1319 -.1246 .1121 .3977 -.3501 -.2899 -.2358  
 155.000 -.1159 .1250 .1625 -.2859 -.2732  
 180.000 -.1110 -.0811 .3827

ALPHA ( 4 ) = 8.061 BETA ( 3 ) = 4.239 MACH = .89970 Q = 599.92 P = 1059.7 RV/L = 3.5781

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4870 .5740

PHI

20.000 1.1482 .7943 .3566 .2206 .1088  
 20.000 .3380 .1934 .0734 .0137  
 40.000 .3403 .1759 .0770 .0184  
 55.000 .2995 .1225 .0316 -.0118  
 70.000 .2685 .0925 -.0054 .0099  
 90.000 .3276 .2680 .0902 -.0050 .0269  
 120.000 .2519 .1091 .0212 .1178  
 140.000 .1499 .0533 .1639  
 150.000 .2283  
 151.000  
 162.000  
 165.000  
 169.000  
 174.000  
 180.000  
 1.1482 .3737 .2269 .1416 .0914 .1970 .6201  
 .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

40.000 .1458 .0993 .0357 -.0859 -.1387 -.2255 -.0111  
 40.000 .1458 .0402 .0812 -.0812 -.1970 -.2135 -.0421  
 70.000 -.3172 -.5831 -.2160 .0388 -.2568 -.1881 -.1455  
 90.000 -.2489 -.4329 .1598 -.0533 .3451 .3017 .1841  
 105.000 .0998 .0998 .0376 .4551 .3222 .2199  
 110.000  
 120.000 .1637 .2265 .0481 .0077 .5600 .5402 .2467  
 120.000 .0541 .2656 .4478 .4452 .2476  
 150.000 -.1082 -.0852 .3608 .4161 .4807 .2534

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/8/C/R ORB FUSELAGE

(XEL-838)

ALPHA ( 4 ) = 8.061 BETA ( 3 ) = 4.239

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

155.000 -.1078 .0957 -.2301 -.4174 -.2561

180.000 -.1253 -.0874 .1032 .3153

ALPHA ( 5 ) = 11.931 BETA ( 1 ) = -3.854 MACH = .89977 Q = 600.28 P = 1059.2 RV/L = 3.5829

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.0981 .9244 .4975 .3374 .2239 .1384 .0740 .0500 .0300 .0544 .0987 .1841 .2167

20.000 .5469 .3601 .2295 .1384 .0810 .0467 .0467 .0467 .0467 .0467 .0467 .0467 .0467

40.000 .6193 .4008 .2841 .1973 .1147 .0584 .0584 .0584 .0584 .0584 .0584 .0584 .0584

55.000 .5722 .3684 .2535 .1551 .0584 .0155 .0155 .0155 .0155 .0155 .0155 .0155 .0155

70.000 .4929 .3053 .1890 .1502 .0516 .0516 .0516 .0516 .0516 .0516 .0516 .0516 .0516

90.000 .4333 .2549 .1660 .1438 .0677 .0677 .0677 .0677 .0677 .0677 .0677 .0677 .0677

120.000 .2990 .1471 .0598 .1438 .1879 .1879 .1879 .1879 .1879 .1879 .1879 .1879 .1879

140.000 .1673 .0892 .0149 .1420 .5611 .5611 .5611 .5611 .5611 .5611 .5611 .5611 .5611

150.000 .1510 .0820 .0149 .1420 .5611 .5611 .5611 .5611 .5611 .5611 .5611 .5611 .5611

162.000 .1520 .0820 .0149 .1420 .5620 .5620 .5620 .5620 .5620 .5620 .5620 .5620 .5620

165.000 .1520 .0820 .0149 .1420 .5620 .5620 .5620 .5620 .5620 .5620 .5620 .5620 .5620

174.000 .1520 .0820 .0149 .1420 .5620 .5620 .5620 .5620 .5620 .5620 .5620 .5620 .5620

180.000 1.0981 .2573 .0959 .0643 .0182 .1455 .6532 .4535 .7122 .6144 .5577 .2119 .0104

X/LB

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .2183 .1717 .0941 -.0260 -.0872 -.1838 -.0116 .4257 .1401

40.000 .2414 .1186 -.0118 -.0118 -.1746 -.1809 -.0917 .2770 .0318

70.000 -.4465 -.7269 .1554 .0004 .2573 .1810 .1393

90.000 -.3444 -.5755 .0461 .2596 .2304 .1808

105.000 -.0051 .0936 .3178 .2674 .2259

110.000 .1391 .1391 .3598 .3598 .2292

120.000 .0054 .1391 .3598 .3598 .2292

135.000 .0159 .1955 .3693 .3693 .2523

150.000 -.2507 .2258 .2842 .3336 .2714 .2649

165.000 -.2046 .0181 .1203 .2108 .3077

180.000 -.1626 -.1356 .0652 .3290

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## TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

(XEB8318)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 5 ) = 11.945 BETA ( 2 ) = .188 MACH = .89977 Q = 600.28 P = 1059.2 RV/L = 3.5829

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     | 0.000 | 1.1057 | .9338 | .5079 | .3480 | .2301 |       | .0798 | .0542 | .0375 | .0375 | .0572 | .1067 | .1943 | .2231 |
| 20.000  |       |        |       | .5214 | .3387 | .2157 | .1253 | .0746 | .0375 | .0132 | .0132 | .0019 | .0976 | .1600 | .2478 |
| 40.000  |       |        |       | .5256 | .3340 | .2219 | .1409 | .0763 | .0375 | .0132 | .0132 | .0019 | .0976 | .1600 | .2478 |
| 55.000  |       |        |       | .4419 | .2475 | .1434 | .0572 | .0258 | .0168 | .0068 | .0068 | .0019 | .0976 | .1600 | .2478 |
| 70.000  |       |        |       | .3700 | .1891 | .0838 | .0716 | .0164 | .0034 | .0034 | .0034 | .0019 | .0976 | .1600 | .2478 |
| 90.000  |       | .4221  |       | .3237 | .1531 | .0779 | .0777 | .0034 | .0034 | .0034 | .0034 | .0019 | .0976 | .1600 | .2478 |
| 120.000 |       |        |       | .2378 | .1026 | .6225 | .1255 | .1397 | .0866 | .0381 | .0381 | .0019 | .0976 | .1600 | .2478 |
| 140.000 |       |        |       |       |       |       |       |       | .0866 | .0381 | .0381 | .0019 | .0976 | .1600 | .2478 |
| 150.000 |       |        |       | .1510 | .0890 | .0063 | .1425 | .4865 | .0352 | .0352 | .0352 | .0019 | .0976 | .1600 | .2478 |
| 162.000 |       |        |       |       |       |       |       | .1656 | .0352 | .0352 | .0352 | .0019 | .0976 | .1600 | .2478 |
| 165.000 |       |        |       |       |       |       |       | .1828 | .0352 | .0352 | .0352 | .0019 | .0976 | .1600 | .2478 |
| 169.000 |       |        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |        |       |       |       |       |       | .5161 |       |       |       |       |       |       |       |
| 180.000 |       |        |       |       |       |       |       | .6082 |       |       |       |       |       |       |       |

X/LB .6520 .7290 .7790 .9210 .8790 .9210 .9210 .9600 .9990 1.0180 1.0460

## PHI

.000 .2288 .1817 .1028 .0182 .0804 .0208 .0224 .4225 .1412 .2623 .0150

|         |       |       |       |       |       |       |       |       |       |       |       |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 40.000  | .2396 | .1817 | .1028 | .0182 | .0804 | .0208 | .0224 | .4225 | .1412 | .2623 | .0150 |
| 70.000  | .4632 | .7432 | .2191 | .0828 | .3108 | .2869 | .1787 | .4225 | .1412 | .2623 | .0150 |
| 90.000  | .3413 | .5922 | .1120 | .0439 | .3401 | .3797 | .1814 | .4225 | .1412 | .2623 | .0150 |
| 105.000 |       |       | .0482 | .0123 | .4252 | .4741 | .2186 | .4225 | .1412 | .2623 | .0150 |
| 110.000 |       |       |       |       |       |       |       | .3450 | .1412 | .2623 | .0150 |
| 120.000 | .2739 | .2944 | .0032 | .0895 | .4507 | .4964 | .2157 | .4225 | .1412 | .2623 | .0150 |
| 135.000 |       |       | .0204 | .2478 | .4200 | .4134 | .2496 | .4225 | .1412 | .2623 | .0150 |
| 150.000 | .2051 | .2172 | .0351 | .3765 | .3823 | .4050 | .2635 | .4225 | .1412 | .2623 | .0150 |
| 165.000 | .1574 |       | .0766 |       | .1559 | .3244 | .2770 | .4225 | .1412 | .2623 | .0150 |
| 190.000 | .1431 | .1220 | .0913 | .3384 |       |       |       | .4225 | .1412 | .2623 | .0150 |

ALPHA ( 5 ) = 11.935 BETA ( 3 ) = 4.259 MACH = .89977 Q = 600.28 P = 1059.2 RV/L = 3.5829

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     | 0.000 | 1.0915 | .9155 | .4958 | .3324 | .2132 |       | .0712 | .0445 | .0273 | .0273 | .0554 | .1184 | .1859 | .2146 |
| 20.000  |       |        |       | .4656 | .2975 | .1818 | .0963 | .0447 | .0190 | .0190 | .0190 | .0019 | .0494 | .1276 | .2244 |
| 40.000  |       |        |       | .4130 | .2442 | .1466 | .0642 | .0183 | .0073 | .0073 | .0073 | .0019 | .0494 | .1276 | .2244 |
| 55.000  |       |        |       | .3064 | .1197 | .0278 | .0376 | .1035 | .0184 | .0184 | .0184 | .0019 | .0494 | .1276 | .2244 |
| 70.000  |       |        |       | .2428 | .0734 | .0037 | .0030 | .0818 | .0170 | .0170 | .0170 | .0019 | .0494 | .1276 | .2244 |
| 90.000  |       | .2600  |       | .2227 | .0607 | .0085 | .0190 | .0565 | .0170 | .0170 | .0170 | .0019 | .0494 | .1276 | .2244 |
| 120.000 |       |        |       | .1761 | .0446 | .0284 | .0953 | .0818 | .0452 | .0452 | .0452 | .0019 | .0494 | .1276 | .2244 |

$$\alpha'_{\text{PHA}}(5) = 11.935 \quad \text{BETA}(3) = 4.259$$

## SECTION : 110WBITER FUSELAGE

DEPENDENT VARIABLE CP

PLACE . DEPOSE

3 831 18901

## SECTION 1

|      |       |       |       |       |       |       |       |       |       |       |       |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| X/LB | .0000 | .0230 | .0463 | .0700 | .1120 | .1590 | .1660 | .1770 | .2040 | .2310 | .3010 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|

PHI  
=.6051

|        |       |       |        |       |       |        |        |
|--------|-------|-------|--------|-------|-------|--------|--------|
| 10.000 | .1236 | .0739 | -.0121 | .1250 | .5930 | -.5719 | 1.0000 |
| 50.000 |       |       |        |       |       |        | .0710  |

[illegible]

|         |       |
|---------|-------|
| 165.000 |       |
| 169.000 | .4820 |

| Variable | Mean   | Standard Deviation | Minimum | Maximum |
|----------|--------|--------------------|---------|---------|
| 174.650  | 1.0915 | .2194              | .1128   | .0644   |
| 180.000  | .0113  | .1472              | .4844   | -.6926  |
| 185.000  | -.5322 | -.6054             | -.6926  | -.6054  |
| 190.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 195.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 200.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 205.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 210.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 215.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 220.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 225.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 230.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 235.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 240.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 245.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 250.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 255.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 260.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 265.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 270.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 275.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 280.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 285.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 290.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 295.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 300.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 305.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 310.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 315.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 320.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 325.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 330.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 335.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 340.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 345.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 350.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 355.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 360.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 365.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 370.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 375.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 380.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 385.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 390.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 395.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 400.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 405.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 410.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 415.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 420.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 425.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 430.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 435.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 440.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 445.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 450.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 455.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 460.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 465.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 470.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 475.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 480.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 485.000  | -.6926 | -.6054             | -.6926  | -.6054  |
| 490.     |        |                    |         |         |

|     |       |       |       |       |       |       |       |       |        |        |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| Y18 | .6520 | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0187 | 1.0450 |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|

[illegible]

| Variable                    | Mean | Standard Deviation | Minimum | Maximum |
|-----------------------------|------|--------------------|---------|---------|
| Age                         | 35.2 | 12.5               | 22      | 65      |
| Gender                      | 1.5  | 1.0                | 1       | 2       |
| Education                   | 13.8 | 2.1                | 10      | 18      |
| Income                      | 28.5 | 15.2               | 10      | 60      |
| Health                      | 1.8  | 0.9                | 1       | 3       |
| Marital Status              | 1.2  | 0.8                | 1       | 2       |
| Employment                  | 1.5  | 0.7                | 1       | 2       |
| Home Ownership              | 1.3  | 0.7                | 1       | 2       |
| Vehicle Ownership           | 1.4  | 0.8                | 1       | 2       |
| Life Satisfaction           | 4.2  | 1.5                | 2       | 7       |
| Life Satisfaction (Control) | 4.1  | 1.4                | 2       | 7       |

|        |       |        |        |        |        |        |
|--------|-------|--------|--------|--------|--------|--------|
| 40.000 | .2253 | .117   | -.0089 | -.1707 | -.2761 | -.1052 |
| 20.000 | .1126 | -.2069 | -.1080 | -.3939 | -.4454 | -.2669 |

|        |         |         |         |         |         |
|--------|---------|---------|---------|---------|---------|
| 70.000 | - .4339 | - .2000 | - .4458 | - .5610 | - .3490 |
| 70.000 | - .3359 | - .5926 | - .0905 | - .0968 | - .3700 |

|         |         |         |         |         |         |
|---------|---------|---------|---------|---------|---------|
| 105.000 | - .0708 | - .0424 | - .5634 | - .6501 | - .4396 |
| 50.000  |         |         |         |         | - .3221 |

| Account | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 | 2062 | 2063 | 2064 | 2065 | 2066 | 2067 | 2068 | 2069 | 2070 | 2071 | 2072 | 2073 | 2074 | 2075 | 2076 | 2077 | 2078 | 2079 | 2080 | 2081 | 2082 | 2083 | 2084 | 2085 | 2086 | 2087 | 2088 | 2089 | 2090 | 2091 | 2092 | 2093 | 2094 | 2095 | 2096 | 2097 | 2098 | 2099 | 2100 | 2101 | 2102 | 2103 | 2104 | 2105 | 2106 | 2107 | 2108 | 2109 | 2110 | 2111 | 2112 | 2113 | 2114 | 2115 | 2116 | 2117 | 2118 | 2119 | 2120 | 2121 | 2122 | 2123 | 2124 | 2125 | 2126 | 2127 | 2128 | 2129 | 2130 | 2131 | 2132 | 2133 | 2134 | 2135 | 2136 | 2137 | 2138 | 2139 | 2140 | 2141 | 2142 | 2143 | 2144 | 2145 | 2146 | 2147 | 2148 | 2149 | 2150 | 2151 | 2152 | 2153 | 2154 | 2155 | 2156 | 2157 | 2158 | 2159 | 2160 | 2161 | 2162 | 2163 | 2164 | 2165 | 2166 | 2167 | 2168 | 2169 | 2170 | 2171 | 2172 | 2173 | 2174 | 2175 | 2176 | 2177 | 2178 | 2179 | 2180 | 2181 | 2182 | 2183 | 2184 | 2185 | 2186 | 2187 | 2188 | 2189 | 2190 | 2191 | 2192 | 2193 | 2194 | 2195 | 2196 | 2197 | 2198 | 2199 | 2200 | 2201 | 2202 | 2203 | 2204 | 2205 | 2206 | 2207 | 2208 | 2209 | 2210 | 2211 | 2212 | 2213 | 2214 | 2215 | 2216 | 2217 | 2218 | 2219 | 2220 | 2221 | 2222 | 2223 | 2224 | 2225 | 2226 | 2227 | 2228 | 2229 | 2230 | 2231 | 2232 | 2233 | 2234 | 2235 | 2236 | 2237 | 2238 | 2239 | 2240 | 2241 | 2242 | 2243 | 2244 | 2245 | 2246 | 2247 | 2248 | 2249 | 2250 | 2251 | 2252 | 2253 | 2254 | 2255 | 2256 | 2257 | 2258 | 2259 | 2260 | 2261 | 2262 | 2263 | 2264 | 2265 | 2266 | 2267 | 2268 | 2269 | 2270 | 2271 | 2272 | 2273 | 2274 | 2275 | 2276 | 2277 | 2278 | 2279 | 2280 | 2281 | 2282 | 2283 | 2284 | 2285 | 2286 | 2287 | 2288 | 2289 | 2290 | 2291 | 2292 | 2293 | 2294 | 2295 | 2296 | 2297 | 2298 | 2299 | 2300 | 2301 | 2302 | 2303 | 2304 | 2305 | 2306 | 2307 | 2308 | 2309 | 2310 | 2311 | 2312 | 2313 | 2314 | 2315 | 2316 | 2317 | 2318 | 2319 | 2320 | 2321 | 2322 | 2323 | 2324 | 2325 | 2326 | 2327 | 2328 | 2329 | 2330 | 2331 | 2332 | 2333 | 2334 | 2335 | 2336 | 2337 | 2338 | 2339 | 2340 | 2341 | 2342 | 2343 | 2344 | 2345 | 2346 | 2347 | 2348 | 2349 | 2350 | 2351 | 2352 | 2353 | 2354 | 2355 | 2356 | 2357 | 2358 | 2359 | 2360 | 2361 | 2362 | 2363 | 2364 | 2365 | 2366 | 2367</ |
|---------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------|
|---------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------|

|         |         |         |         |       |         |         |         |
|---------|---------|---------|---------|-------|---------|---------|---------|
| 120.000 | - .2146 | - .2890 | - .0301 | .0423 | 1.5312  | .0222   | 0.000   |
| 175.000 |         |         | .0413   | .2186 | - .4566 | - .5212 | - .5598 |

|         |         |         |       |       |         |         |         |
|---------|---------|---------|-------|-------|---------|---------|---------|
| 135.000 | - .1478 | - .1537 | .0834 | .3417 | - .3962 | - .4924 | - .3729 |
| 150.000 |         |         |       |       |         |         | - .2630 |

[illegible]

|         |         |         |       |       |
|---------|---------|---------|-------|-------|
| 180.000 | - .1622 | - .1201 | .0699 | .3270 |
|---------|---------|---------|-------|-------|

1



| ALPHA ( 1 ) = -4.025 BETA ( 2 ) = -3.846 MACH = .59694 |        |                       |        |        |        |        |        |        |        |
|--|--------|-----------------------|--------|--------|--------|--------|--------|--------|--------|
| SECTION ( 1 ) ORBITER FUSELAGE                         |        | DEPENDENT VARIABLE CP |        |        |        |        |        |        |        |
| X/LB   |        | .0000                 | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  |        |
| PHI  | 1.0501 | .1661                 | -.1814 | -.1922 | -.2069 | -.2419 | -.2641 | -.2825 | -.3002 |
| 20.000   |        |                       |        |        |        |        |        |        |        |
| 40.000   |        |                       |        |        |        |        |        |        |        |
| 55.000   |        |                       |        |        |        |        |        |        |        |
| 70.000   |        |                       |        |        |        |        |        |        |        |
| 90.000   | .6021  | .4300                 | .2182  | .1216  | .0398  |        |        |        |        |
| 120.000  |        | .5268                 | .3690  | .2529  | .2398  |        |        |        |        |
| 140.000  |        | .5399                 | .4110  | .3281  | .3256  |        |        |        |        |
| 151.000  |        |                       |        |        |        |        |        |        |        |
| 162.000  |        |                       |        |        |        |        |        |        |        |
| 169.000  |        |                       |        |        |        |        |        |        |        |
| 174.000  |        |                       |        |        |        |        |        |        |        |
| 180.000  | 1.0501 | .7258                 | .4770  | .3831  | .3080  | .3214  |        |        |        |
| X/LB   | .6520  | .7290                 | .7790  | .8210  | .8790  | .9210  | .9600  |        |        |
| PHI  | -.0975 | -.1143                | -.1441 | -.1934 | -.1449 | -.1356 | -.0297 |        |        |
| 40.000   | -.1701 | -.1578                | -.2059 | -.1834 | -.1103 | -.0854 |        |        |        |
| 70.000   | -.0145 | -.0384                | .0380  | .1298  | -.0076 | -.0175 | -.0895 |        |        |
| 90.000   | .0198  | .0146                 | .0881  | .1596  | -.0636 | -.0821 | -.1375 |        |        |
| 105.000  |        |                       | .1368  | .2300  | -.1636 | -.1390 | -.1927 |        |        |
| 110.000  |        |                       |        |        |        |        |        |        |        |
| 120.000  | .0299  | .0766                 | .2210  | .3617  | -.2177 | -.1834 | -.2086 |        |        |
| 135.000  |        |                       | .2840  | .4385  | -.1575 | -.1132 | -.1772 |        |        |
| 150.000  | .0449  | .1056                 | .2795  | .4077  | -.1167 | -.0333 | -.1451 |        |        |
| 162.000  | .0378  |                       | .2457  |        | .0085  | -.0883 | -.2602 |        |        |
| 180.000  | .0187  | .0819                 | .2188  | .4078  |        |        |        |        |        |
| ALPHA ( 1 ) = -3.896 BETA ( 3 ) = .184 MACH = .59694   |        |                       |        |        |        |        |        |        |        |
| SECTION ( 1 ) ORBITER FUSELAGE                         |        | DEPENDENT VARIABLE CP |        |        |        |        |        |        |        |
| X/LB   |        | .0000                 | .0080  | .0237  | .0460  | .0700  | .1120  | .1580  |        |
| PHI  | 1.0592 | .1806                 | -.1809 | -.1767 | -.2018 | -.2157 |        |        |        |
| 20.000   |        |                       | -.1608 | -.1748 | -.2280 | -.2197 |        |        |        |
| 40.000   |        |                       | -.0179 | -.1895 | -.2294 | -.2219 |        |        |        |
| 55.000   |        |                       | .1230  | -.0586 | -.1063 | -.1678 |        |        |        |
| 70.000   |        |                       | .2226  | .0357  | -.0277 | -.0580 |        |        |        |
| 90.000   | .4476  | .3031                 | .0945  | .0088  | -.0550 |        |        |        |        |
| 120.000  |        | .4181                 | .2582  | .1450  | .1410  |        |        |        |        |





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TABULATED PRESSURE DATA - OA148 ( AMES 11-073-1 )

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AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

(XEB837)

ALPHA ( 1 ) = -3.946 BETA ( 5 ) = 8.339

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0480

PHI

70.000 -.0959 -.1251 -.0811 -.0002 -.1370 -.1076 -.1377  
 90.000 -.0390 -.0766 -.0570 -.0123 -.2094 -.1793 -.1894  
 105.000 -.0099 -.0031 -.0099 -.0031 -.2508 -.2457  
 110.000  
 120.000 -.0515 -.0711 -.0269 -.1080 -.5781 -.4343 -.3768  
 135.000 .0697 .1532 -.4878 -.3411 -.3146  
 150.000 -.0430 -.0159 .1027 .4298 -.4368 -.3660 -.2784  
 165.000 -.0378 .1263 -.2678 -.3530 -.2657  
 180.000 -.0342 .0278 .1687 .3623

-3163  
-3050

ALPHA ( 2 ) = .030 BETA ( 1 ) = -7.898 MACH = .5852 Q = 584.31 P = 2385.8 RV/L = 4.8794

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.0318 .3154 -.0730 -.1153 -.1398 -.1712 -.1999  
 20.000 -.0276 -.0981 -.1712 -.1999  
 40.000 .2025 -.0441 -.1343 -.1660  
 55.000 .4000 .1896 .1081 .0139  
 70.000 .9002 .2921 .2000 .1271  
 90.000 .7333 .5471 .3494 .2409 .1650  
 120.000 .5497 .3948 .2802 .2806  
 140.000 .4541 .3184 .2435 .2614  
 150.000  
 162.000  
 165.000  
 169.000  
 174.000  
 180.000 1.0318 .5806 .3175 .2431 .1829 .2039 .6541

-1.381  
-1.708  
-.2262  
-.0488  
-.0975  
-.1315  
-.1608  
-.1547  
-.1788  
-.2623  
-.4623  
-.3983  
-.1590  
-.0820  
-.0650  
-.1870  
-.1721  
-1.1187  
-.2942  
-.1675  
-.0910  
-.0676  
-.2948  
-.13516  
-1.1627  
-.0958  
-.0714

X/LB

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0480

PHI

.000 -.0444 -.0714 -.1044 -.1599 -.1296 -.1223 -.0201  
 40.000 -.1006 -.1148 -.1775 -.1675 -.0931 -.0861  
 70.000 -.0769 .0340 .1763 .0392 .0280 .0637  
 90.000 -.0489 .0898 .2214 .0012 .0406 .1243  
 105.000 .1330 .3446 -.0774 -.0675 -.1684  
 110.000  
 120.000 -.0810 .0005 .1913 .5024 .1540 .1200 .1433  
 135.000 .2327 .4270 .1484 .0974 .1677  
 150.000 -.0492 .0234 .2172 .2381 .1968 .0758 .1364

.2710 .0224  
.1832 -.0084-3028  
-2365

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB837)

ALPHA ( 2 ) = .030 BETA ( 1 ) = -7.898

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9500 .9990 1.0180 1.0460

PHI

165.000 -.0551 .1701 .1244 -.0330 -.2684  
180.000 -.0684 -.0031 .1243 .2408

ALPHA ( 2 ) = .040 BETA ( 2 ) = -3.863 MACH = .58552 Q = 594.31 P = 2385.8 RV/L = 4.8784

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0060 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.0709 .3529 -.0321 -.0858 -.1183 -.1654  
20.000 -.0069 -.0719 -.1422 -.1654  
40.000 .1717 -.0388 -.1150 -.1341  
55.000 .3161 .1175 .0427 -.0252  
70.000 .3878 .1876 .1007 .0503  
90.000 .4339 .2388 .1372 .0721  
120.000 .4677 .3150 .2134 .2152  
140.000 .4307 .3067 .2317 .2500  
150.000  
151.000  
162.000  
165.000  
169.000  
174.000  
180.000.0000 .5922 .3531 .2833 .2146 .2382 .6363  
1.0709 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460  
PHI  
-.0345 -.0636 -.1003 -.1577 -.1243 -.1227 -.0203  
40.000 -.0774 -.1100 -.1641 -.1666 -.0981 -.0745  
70.000 -.1176 -.1173 -.1220 -.1012 -.0113 -.0799  
90.000 -.0672 -.0556 -.0493 -.1564 -.0684 -.0801 -.1395  
105.000 .0992 .2408 -.1538 -.1365 -.1868  
110.000  
120.000  
135.000  
150.000  
165.000  
180.000.0000 .0130 .1951 .3684 -.2277 -.1750 -.1865  
1.0709 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460  
PHI  
-.0774 -.1100 -.1641 -.1666 -.0981 -.0745  
70.000 -.1176 -.1173 -.1220 -.1012 -.0113 -.0799  
90.000 -.0672 -.0556 -.0493 -.1564 -.0684 -.0801 -.1395  
105.000 .0992 .2408 -.1538 -.1365 -.1868  
110.000  
120.000  
135.000  
150.000  
165.000  
180.000.0000 .0610 .2444 .3070 -.1777 -.1242 -.1568  
1.0709 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460  
PHI  
-.0070 .2068 .2444 .3070 -.1777 -.1242 -.1568  
105.000 .0992 .2408 -.1538 -.1365 -.1868  
110.000  
120.000  
135.000  
150.000  
165.000  
180.000

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## TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB837)

ALPHA ( 2 ) = .104 BETA ( 3 ) = .181 MACH = .59652 Q = 594.31 P = 2385.8 RN/L = 4.8784

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770   | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|-------|
| PHI     | 1.0791 | .3637  | -.0318 | -.0731 | -.1167 | -.1448 | -.1573 | -.1161 | -.1092  | -.0806 | -.0521 | -.0263 | -.0028 | -.0062 |       |
| 20.000  |        | -.0140 | -.0620 | -.0513 | -.1375 | -.1219 | -.1360 | -.1279 | -.1438  | -.0941 | -.0388 | -.0234 | -.0182 | -.0020 |       |
| 40.000  |        | .1200  | -.0513 | -.0470 | -.0158 | -.0742 | -.1360 | -.1360 | -.1722  | -.2196 | -.0878 | -.0284 | .0066  |        |       |
| 55.000  |        | .2250  | -.0470 | .0839  | .0100  | -.0256 | -.1422 | -.1422 | -.2210  | -.2575 | -.1157 | -.0346 | .0039  |        |       |
| 70.000  |        | .2746  | .0839  | .0839  | .0100  | -.0256 | -.1422 | -.1521 | -.3218  | -.3021 | -.2360 | -.0462 | -.0118 |        |       |
| 90.000  | .4457  | .3161  | .1199  | .0330  | -.0173 | -.1285 | -.0323 | -.0323 | -.3546  | -.3093 | -.1257 | -.0495 | -.0150 |        |       |
| 120.000 |        | .3719  | .2215  | .1261  | .1285  |        |        | .3692  | -.4120  |        |        |        |        |        |       |
| 140.000 |        | .3952  | .2821  | .1952  | .2084  |        |        |        | -.5599  |        |        |        |        |        |       |
| 150.000 |        |        |        |        |        |        |        | -.0102 |         |        |        |        |        |        |       |
| 162.000 |        |        |        |        |        |        |        | .0265  |         |        |        |        |        |        |       |
| 165.000 |        |        |        |        |        |        |        |        | -1.0844 | -.2402 | -.1240 | -.0466 | -.0119 |        |       |
| 169.000 |        |        |        |        |        |        |        | .4634  |         |        |        |        |        |        |       |
| 174.000 |        |        |        |        |        |        | .6211  | .4390  |         |        |        |        |        |        |       |
| 180.000 | 1.0791 | .5886  | .3707  | .2814  | .2172  | .2453  | .9800  | .9990  | -1.2950 | -.2287 | -.1146 | -.0469 | -.0169 |        |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9800  |        | 1.0180  | 1.0460 |        |        |        |        |       |

## PHI

|         |        |        |        |        |        |        |        |        |       |        |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--|--|--|--|--|
| .000    | -.0337 | -.0621 | -.1033 | -.1605 | -.1302 | -.1245 | -.0217 |        | .2584 | .0163  |  |  |  |  |  |
| 40.000  | -.0602 | -.1441 | -.1059 | -.1624 | -.1655 | -.1037 | -.0845 |        | .1483 | -.0404 |  |  |  |  |  |
| 70.000  | -.1384 | -.0806 | -.0486 | .0675  | .0670  | -.0585 | .1082  |        |       |        |  |  |  |  |  |
| 90.000  | -.0877 | -.0806 | .0153  | .0870  | .1357  | -.1240 | .1609  |        |       |        |  |  |  |  |  |
| 105.000 |        | .0731  | .1103  | .1103  | -.2264 | -.1771 | -.2088 |        |       |        |  |  |  |  |  |
| 110.000 | -.0369 | .0058  | .1528  | .1660  | -.3123 | -.2424 | -.2352 | -.3064 |       |        |  |  |  |  |  |
| 120.000 |        |        | .2131  | .3427  | -.2667 | -.1680 | -.2184 | -.2474 |       |        |  |  |  |  |  |
| 135.000 |        |        | .2195  | .3978  | -.2301 | -.1869 | -.1925 |        |       |        |  |  |  |  |  |
| 150.000 | .0002  | .0580  | .2096  | .2096  | -.0772 | -.1996 | -.2497 |        |       |        |  |  |  |  |  |
| 165.000 | .0030  | .0666  | .2094  | .4174  |        |        |        |        |       |        |  |  |  |  |  |
| 180.000 | -.0033 |        |        |        |        |        |        |        |       |        |  |  |  |  |  |

ALPHA ( 2 ) = .102 BETA ( 4 ) = .4244 MACH = .59652 Q = 594.31 P = 2385.8 RN/L = 4.8784

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | 1.0620 | .3458  | -.0394 | -.0759 | -.1355 | -.1461 | -.1412 | -.1239 | -.1094 | -.0857 | -.0591 | -.0296 | -.0068 | -.0147 |       |
| 20.000  |        | -.0373 | -.0815 | -.0815 | -.1461 | -.1412 |        | -.1350 | -.1192 | -.0958 | -.0383 | -.0208 | -.0148 | .0070  |       |
| 40.000  |        | .0489  | -.0881 | -.0881 | -.1286 | -.1309 |        | -.1483 | -.1438 | -.0958 | -.0383 | -.0208 | -.0148 |        |       |
| 55.000  |        | .1162  | -.0336 | -.0336 | -.0801 | -.1185 |        | -.1739 | -.2102 | -.2477 | -.1088 | -.0416 | -.0044 |        |       |
| 70.000  |        | .1537  | -.0155 | -.0155 | -.0770 | -.0924 |        | -.1963 | -.2667 | -.2824 | -.1309 | -.0428 | -.0026 |        |       |
| 90.000  | .2741  | .1926  | .0066  | .0066  | -.0661 | -.1038 |        | -.2272 | -.3828 | -.2824 | -.2613 | -.0570 | -.0186 |        |       |
| 120.000 |        | .2657  | .1208  | .1208  | .0189  | .0293  |        | -.1533 | -.4444 | -.3361 | -.2613 | -.0570 | -.0186 |        |       |

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TABULATED PRESSURE DATA - 0A148 ( AVES 11-073-1 )

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AVES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB837)

ALPHA ( 2 ) = .102 BETA ( 4 ) = 4.244

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040   | .2510  | .3010  | .3780  | .4970  | .5749 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|---------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |       |         |        |        |        |        |       |
| 140.000 |        |       |       |       |       |       |       |       |       |         |        |        |        |        |       |
| 150.000 |        |       |       |       |       |       |       |       |       |         |        |        |        |        |       |
| 151.000 |        |       |       |       |       |       |       |       |       |         |        |        |        |        |       |
| 162.000 |        |       |       |       |       |       |       |       |       |         |        |        |        |        |       |
| 165.000 |        |       |       |       |       |       |       |       |       |         |        |        |        |        |       |
| 169.000 |        |       |       |       |       |       |       |       |       |         |        |        |        |        |       |
| 174.000 |        |       |       |       |       |       |       |       |       |         |        |        |        |        |       |
| 180.000 | 1.0620 | .5600 | .3546 | .2648 | .2146 | .2384 | .5578 | .4035 | .4224 | -1.2903 | -2.404 | -.1304 | -.0810 | -.0306 |       |

X/LB

PHI

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040   | .2510  | .3010  | .3780  | .4970  | .5749 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|---------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |       |         |        |        |        |        |       |
| 140.000 |        |       |       |       |       |       |       |       |       |         |        |        |        |        |       |
| 150.000 |        |       |       |       |       |       |       |       |       |         |        |        |        |        |       |
| 151.000 |        |       |       |       |       |       |       |       |       |         |        |        |        |        |       |
| 162.000 |        |       |       |       |       |       |       |       |       |         |        |        |        |        |       |
| 165.000 |        |       |       |       |       |       |       |       |       |         |        |        |        |        |       |
| 169.000 |        |       |       |       |       |       |       |       |       |         |        |        |        |        |       |
| 174.000 |        |       |       |       |       |       |       |       |       |         |        |        |        |        |       |
| 180.000 | 1.0620 | .5600 | .3546 | .2648 | .2146 | .2384 | .5578 | .4035 | .4224 | -1.2903 | -2.404 | -.1304 | -.0810 | -.0306 |       |

ALPHA ( 2 ) = .019 BETA ( 5 ) = 8.303 MACH = .58552 Q = 584.31 P = 2385.8 RV/L = 4.8784

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5749  |
|---------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 140.000 |        |       |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 150.000 |        |       |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 151.000 |        |       |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 162.000 |        |       |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 165.000 |        |       |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 169.000 |        |       |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 174.000 |        |       |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 180.000 | 1.0087 | .3149 | -.0535 | -.0945 | -.1575 | -.1570 | -.1629 | -.1419 | -.1425 | -.1280 | -.1050 | -.0745 | -.0429 | -.0194 | -.0303 |

.4878

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TABULATED PRESSURE DATA - 0A148 ( AXES 11-073-1 )

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(XE8837)

AXES 11-073(0A148) - A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = .019 BETA ( 5 ) = 8.303

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

180.000 1.0087 .4917 .3206 .2181 .1567 .1925 .3209 -1.2970 -.2757 -.1620 -.1009 -.0775

X/LB

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 -.0438 -.0642 -.1056 -.1642 -.1346 -.1421 -.0380 .2603 .0200

40.000 -.0379 -.0555 -.0955 -.1571 -.1733 -.1172 -.0561 .1112 -.0722

70.000 -.1571 -.1936 -.1196 -.0232 -.1443 -.1138 -.1406

90.000 -.1099 -.1246 -.0705 -.0285 -.2267 -.2005 -.2055

105.000 -.1099 -.1246 -.0705 -.0285 -.2267 -.2005 -.2055

110.000 -.0782 -.0803 -.1115 -.1152 -.5486 -.4103 -.3485

120.000 -.0782 -.0803 -.1115 -.1152 -.5486 -.4103 -.3485

135.000 -.0573 -.0263 .0943 .3666 -.4740 -.3884 -.2904

150.000 -.0599 .0997 .3069

165.000 -.0743 -.0072 .1367

180.000 -.0743 -.0072 .1367

ALPHA ( 3 ) = 4.036 BETA ( 1 ) = -7.909 MACH = .59620 Q = 593.73 P = 2386.0 RW/L = 4.8840

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.0263 .4817 .0831 -.0069 -.0492 -.1063 -.0918 -.0789 -.0620 -.0402 -.0133 .0258 .0328

20.000 .1435 .0304 -.0606 -.1013 -.1013

40.000 .5571 .1076 .0254 -.0287 -.0970 -.0967 -.0470 -.0076 .0102 .0159 .0425

60.000 .4857 .2036 .2012 .1121 .0288

70.000 .5222 .3247 .2218 .1536 .0232

90.000 .5248 .3387 .2391 .1702 .0382

100.000 .4543 .3105 .2102 .2140 .1446

120.000 .3243 .1996 .1413 .1813

140.000 .3243 .1996 .1413 .1813

150.000 .3243 .1996 .1413 .1813

162.000 .3243 .1996 .1413 .1813

165.000 .3243 .1996 .1413 .1813

169.000 .3243 .1996 .1413 .1813

174.000 .3243 .1996 .1413 .1813

180.000 .3243 .1996 .1413 .1813

X/LB

.5520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .0169 -.0110 -.0584 -.1175 -.1002 -.1072 -.0121

40.000 -.0016 -.0546 -.1227 .1415 -.0696 -.0782

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TABULATED PRESSURE DATA - 0A148 ( AXES 11-073-1 )

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AXES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB837)

ALPHA ( 3 ) = 4.036 BETA ( 1 ) = -7.909

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

|         |        |        |        |       |        |        |        |
|---------|--------|--------|--------|-------|--------|--------|--------|
| 70.000  | -.2034 | -.1488 | -.0016 | .1741 | .0487  | .0386  | -.0483 |
| 90.000  | -.1434 | -.0913 | .0551  | .2219 | .0080  | -.0378 | -.1202 |
| 105.000 |        |        | .0882  | .3740 | -.0581 | -.0821 | -.1658 |
| 110.000 |        |        |        |       |        |        | -.2934 |
| 120.000 | -.2086 | -.0940 | .1260  | .5213 | -.1825 | -.1412 | -.1553 |
| 135.000 |        |        | .1756  | .3665 | -.1939 | -.1278 | -.1894 |
| 150.000 | -.1086 | -.0250 | .1763  | .1114 | -.2211 | -.1086 | -.1601 |
| 165.000 | -.0963 |        | .1333  |       | .0959  | -.0506 | -.2679 |
| 180.000 | -.0954 | -.0296 | .1030  | .1835 |        |        |        |

ALPHA ( 3 ) = 4.041 BETA ( 2 ) = -3.867 MACH = .59620 Q = 583.73 P = 2306.0 RV/L = 4.8840

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

|         |        |       |       |       |        |        |        |          |          |        |        |        |        |
|---------|--------|-------|-------|-------|--------|--------|--------|----------|----------|--------|--------|--------|--------|
| .000    | 1.0618 | .5267 | .1179 | .0236 | -.0302 |        | -.0714 | -.0606   | -.0472   | -.0246 | .0036  | .0352  | .0414  |
| 20.000  |        |       | .1555 | .0563 | -.0418 | -.0814 | -.0811 | -.0781   | -.0414   | .0036  | .0176  | .0283  | .0596  |
| 40.000  |        |       | .3085 | .1011 | .0162  | -.0255 | -.0776 | -.0869   |          |        |        |        |        |
| 55.000  |        |       | .3930 | .2090 | .1217  | .0432  | -.0408 | -.0984   |          |        |        |        |        |
| 70.000  |        |       | .4087 | .2232 | .1345  | .0780  | -.0479 | -.1497   | -.1910   | -.0886 | -.0435 | -.0248 |        |
| 90.000  | .5636  |       | .4148 | .2353 | .1447  | .0901  | -.0460 | -.2279   | -.2213   | -.1199 | -.0518 | -.0321 |        |
| 120.000 |        |       | .3862 | .2467 | .1478  | .1727  | .0671  | -.2917   | -.3069   | -.2829 | -.1206 | -.1147 |        |
| 140.000 |        |       |       |       |        |        | .4160  | -.6039   | -.4132   | -.1722 | -.0879 | -.0672 |        |
| 150.000 |        |       | .3064 | .2054 | .1300  | .1746  |        | .0496    |          |        |        |        |        |
| 151.000 |        |       |       |       |        |        |        | .0375    |          |        |        |        |        |
| 162.000 |        |       |       |       |        |        |        |          | -.1.2555 | -.3011 | -.1651 | -.0839 | -.0608 |
| 165.000 |        |       |       |       |        |        |        |          |          |        |        |        |        |
| 169.000 |        |       |       |       |        |        |        |          |          |        |        |        |        |
| 174.000 |        |       |       |       |        |        |        |          |          |        |        |        |        |
| 180.000 | 1.0618 | .4404 | .2292 | .1794 | .1170  | .1618  | .4398  | -.1.4630 | -.2712   | -.1440 | -.0755 | -.0566 |        |

X/LB

PHI

|         |        |        |        |        |        |        |        |
|---------|--------|--------|--------|--------|--------|--------|--------|
| .000    | -.0240 | -.0016 | -.0525 | -.1166 | -.0995 | -.1084 | -.0080 |
| 40.000  | .0134  |        | -.0478 | -.1169 | -.1496 | -.0743 | -.0674 |
| 70.000  | -.2373 | -.1887 | -.0556 | .1168  | -.0058 | -.0009 | -.0707 |
| 90.000  | -.1697 | -.1260 | .0148  | .1536  | -.0641 | -.0842 | -.1369 |
| 105.000 |        |        | .0600  | .2587  | -.1378 | -.1301 | -.1886 |
| 110.000 |        |        |        |        |        |        |        |
| 120.000 | -.1480 | -.0917 | .1606  | .3443  | -.2461 | -.1848 | -.1847 |
| 135.000 |        |        | .2128  | .3125  | -.2372 | -.1618 | -.2061 |
| 150.000 | -.0632 | .0160  | .2115  | .2147  | -.2417 | -.1567 | -.1820 |

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TABULATED PRESSURE DATA - 0A148 (AVES 11-073-1)

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AVES 11-073(0A148) - 140A/B/C/R ORB FUSELAGE

(XE88377)

ALPHA (3) = 4.041 BETA (2) = -3.867

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9800 .9990 1.0180 1.0480

PHI

165.000 -.0478 .1783  
180.000 -.0526 .0265 .1635 .2658  
-.0037 -.1380 -.2529

ALPHA (3) = 4.040 BETA (3) = .186 MACH = .59620 Q = 593.73 P = 2386.0 RV/L = 3.8840

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.0728 .5307 .1176 .0360 -.0257  
20.000 .1404 .0466 -.0380 -.0724  
42.000 .2438 .0641 -.0051 -.0335  
55.000 .2883 .1213 .0506 -.0213  
70.000 .2899 .1160 .0419 -.0014  
90.000 .3038 .1312 .0518 .0064  
120.000 .3061 .1687 .0786 .1055  
140.000 .2775 .1938 .1096 .1517  
150.000  
162.000  
165.000  
169.000  
174.000  
180.000 1.0728 .4386 .2494 .1710 .1267 .1754 .5672  
X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .0247 -.0028 -.0477 -.1172 -.1012 -.1131 -.0105  
40.000 .0244 -.0505 -.0578 -.1478 -.0948 -.0452  
70.000 -.2530 -.2179 -.0894 .0579 -.0659 -.0525 -.1042  
90.000 -.1760 -.1435 -.0181 .0733 .1307 .1213 .1569  
105.000 .0532 .0981 .2117 .2105  
110.000  
120.000 -.1049 -.0357 .1437 .1205 -.3019 .2355 .2182  
135.000 .1909 .2350 .2873 .2018 .2261  
150.000 -.0348 .0292 .1929 .3025 .2597 .2042 .1994  
165.000 -.0315 .1699 .1061 .2114 .2292  
180.000 -.0407 .0368 .1697 .3795  
X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460.2767 .0184  
.1699 -.0288-.3005  
-.2403

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TABULATED PRESSURE DATA - 0A148 ( AXES 11-073-1 )

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ALPHA ( 3 ) = 4.044 BETA ( 4 ) = 4.237 MACH = .59620 Q = 593.73 P = 2386.0 RVL = 4.8840

(XEB837)

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230 | .0460 | .0700 | .1120  | .1580 | .1660  | .1770  | .2040   | .2510  | .3010  | .3760  | .4970  | .5740 |
|---------|-------|--------|-------|-------|-------|--------|-------|--------|--------|---------|--------|--------|--------|--------|-------|
| PHI     | .000  | 1.0524 | .5130 | .1072 | .0295 | -.0412 |       | -.0716 |        | -.0676  | -.0453 | -.0260 | .0050  | .0422  | .0384 |
| 20.000  |       |        | .1015 | .0155 | .0155 | -.0598 |       | -.0871 |        | -.0878  |        |        |        |        |       |
| 40.000  |       |        | .1556 | .0127 | .0127 | -.0465 |       | -.0875 |        | -.1128  | -.0767 | -.0270 | -.0012 | .0149  | .0674 |
| 55.000  |       |        | .1683 | .0222 | .0222 | -.0362 |       | -.0807 |        | -.1935  |        |        |        |        |       |
| 70.000  |       |        | .1701 | .0115 | .0115 | -.0510 |       | -.1757 |        | -.2555  | -.2539 | -.1402 | -.0765 | -.0476 |       |
| 90.000  | .2498 |        | .1892 | .0222 | .0222 | -.0450 |       | -.1854 |        | -.3638  | -.2806 | -.1528 | -.0682 | -.0438 |       |
| 120.000 |       |        | .2143 | .0830 | .0830 | -.0044 |       | -.1320 |        | -.4397  | -.3375 | -.2487 | -.0590 | -.0480 |       |
| 140.000 |       |        |       |       |       |        |       |        |        | -.5255  |        |        |        |        |       |
| 150.000 |       |        | .2280 | .1485 | .1485 | .0664  | .0980 | .2268  | -.1766 | -.6900  | -.3282 | -.1421 | -.0602 | -.0430 |       |
| 151.000 |       |        |       |       |       |        |       |        | -.1588 |         |        |        |        |        |       |
| 162.000 |       |        |       |       |       |        |       | .3482  |        | -1.2017 | -.2686 | -.1442 | -.0654 | -.0454 |       |
| 165.000 |       |        |       |       |       |        | .5086 | .3498  |        | -1.4187 | -.2707 | -.1402 | -.0696 | -.0585 |       |
| 169.000 |       |        |       |       |       |        |       |        |        |         |        |        |        |        |       |
| 174.000 |       |        |       |       |       |        |       | .9990  | 1.0180 | 1.0460  |        |        |        |        |       |
| 180.000 |       |        |       |       |       |        |       |        |        |         |        |        |        |        |       |

X/LB

PHI

|         |        |        |        |        |        |        |        |        |       |        |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--|--|--|--|--|
| 40.000  | .0250  | .0018  | -.0482 | -.1209 | -.1088 | -.1152 | -.0139 |        | .2796 | .0214  |  |  |  |  |  |
| 70.000  | .0292  | -.0470 | -.1205 | .0072  | -.1112 | -.0824 | -.1295 |        | .1441 | -.0444 |  |  |  |  |  |
| 90.000  | -.2657 | -.2399 | -.1205 | .0072  | -.1112 | -.0824 | -.1295 |        |       |        |  |  |  |  |  |
| 105.000 | -.1811 | -.1574 | -.0536 | -.0042 | -.1935 | -.1621 | -.1771 |        |       |        |  |  |  |  |  |
| 110.000 |        | -.0053 | -.0053 | .0134  | -.2898 | -.2139 | -.2249 |        |       |        |  |  |  |  |  |
| 120.000 | -.0974 | -.0660 | .0508  | .0740  | -.4054 | -.3072 | -.2744 | -.3079 |       |        |  |  |  |  |  |
| 135.000 |        |        | .1361  | .3027  | -.3798 | -.2612 | -.2606 | -.2555 |       |        |  |  |  |  |  |
| 150.000 | -.0423 | .0150  | .1560  | .2902  | -.3589 | -.2920 | -.2418 |        |       |        |  |  |  |  |  |
| 165.000 | -.0385 | .1555  | .1555  |        | -.2182 | -.2900 | -.2388 |        |       |        |  |  |  |  |  |
| 180.000 | -.0537 | .0273  | .1701  | .3009  |        |        |        |        |       |        |  |  |  |  |  |

ALPHA ( 3 ) = 4.049 BETA ( 5 ) = 8.284 MACH = .59620 Q = 593.73 P = 2386.0 RVL = 4.8840

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460  | .0700  | .1120  | .1580 | .1660  | .1770 | .2040  | .2510  | .3010  | .3760  | .4970  | .5740 |
|---------|-------|-------|-------|--------|--------|--------|-------|--------|-------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | .9986 | .4831 | .0883  | .0141  | -.0630 |       | -.0883 |       | -.0838 | -.0683 | -.0440 | -.0083 | .0329  | .0257 |
| 20.000  |       |       | .0531 | -.0148 | -.0820 | -.1041 |       | -.1062 |       | -.1141 |        |        |        |        |       |
| 40.000  |       |       | .0563 | -.0485 | -.0967 | -.1060 |       | -.1297 |       | -.1563 | -.1324 | -.0702 | -.0744 | -.0100 | .0527 |
| 55.000  |       |       | .0467 | -.0749 | .1221  | -.1477 |       | -.1995 |       | -.2408 |        |        |        |        |       |
| 70.000  |       |       | .0415 | -.0836 | -.1389 | -.1330 |       | -.2296 |       | -.2948 | -.2779 | -.1522 | -.0882 | -.2550 |       |
| 90.000  | .0660 |       | .0660 | -.0841 | -.1323 | -.1395 |       | -.2588 |       | -.4121 | -.2505 | -.1487 | -.0654 | -.0471 |       |
| 120.000 |       |       | .1015 | -.0153 | -.1007 | -.0611 |       | -.2441 |       | -.5128 | -.3539 | -.2449 | -.0586 | -.0490 |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB837)

ALPHA ( 3 ) = 4.049 BETA ( 5 ) = 8.264

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | 0.000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1680 | .1770 | .2040 | .2510 | .3010 | .3780 | .4870 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1680 | .1770 | .2040 | .2510 | .3010 | .3780 | .4870 | .5740 |
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1680 | .1770 | .2040 | .2510 | .3010 | .3780 | .4870 | .5740 |
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

PHI

|         |        |        |         |        |        |        |        |
|---------|--------|--------|---------|--------|--------|--------|--------|
| 40.000  | .0181  | -.0127 | -.0473  | -.1206 | -.1083 | -.1202 | -.0241 |
| 70.000  | .0231  | -.0469 | -.1160  | -.1579 | -.1046 | -.1040 |        |
| 90.000  | -.2633 | -.2608 | -.1640  | -.0436 | -.1512 | -.1416 |        |
| 105.000 | -.1891 | -.1830 | -.11051 | -.0552 | -.2384 | -.1828 |        |
| 110.000 |        |        | -.0610  | -.0440 | -.3422 | -.2508 | -.2408 |
| 120.000 | -.1115 | -.1025 | -.0017  | -.0293 | -.4986 | -.3793 | -.3176 |
| 135.000 |        |        | .0793   | .0901  | -.4897 | -.3396 | -.2971 |
| 150.000 | -.0758 | -.0288 | .0879   | .2596  | -.4976 | -.3920 | -.2912 |
| 165.000 | -.0760 |        | .0859   |        | -.3899 | -.3910 | -.2477 |
| 180.000 | -.1028 | -.0319 | .1129   | .2370  |        |        |        |

ALPHA ( 4 ) = 7.972 BETA ( 1 ) = -7.894 MACH = .58656 Q = 584.55 P = 2385.8 RW/L = 4.8239

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | 0.000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1680 | .1770 | .2040 | .2510 | .3010 | .3780 | .4870 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 20.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 55.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1680 | .1770 | .2040 | .2510 | .3010 | .3780 | .4870 | .5740 |
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 20.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 55.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1680 | .1770 | .2040 | .2510 | .3010 | .3780 | .4870 | .5740 |
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 20.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 40.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 55.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 70.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.000  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 120.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

(X58837)

ALPHA ( 4 ) = 7.972 BETA ( 1 ) = -7.894

AMES 11-073(QA148) -140A/B/C/R ORB FUSELAGE

## SECTION ( ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

|      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| X/LB | .0006 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3760 | .4970 | .5740 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|

### III

|         |       |       |       |       |       |       |       |         |        |        |        |        |
|---------|-------|-------|-------|-------|-------|-------|-------|---------|--------|--------|--------|--------|
| 180.000 | .9979 | .2751 | .0804 | .0503 | .0019 | .0704 | .1697 | -1.7130 | -.3153 | -.1853 | -.1144 | -.1098 |
|---------|-------|-------|-------|-------|-------|-------|-------|---------|--------|--------|--------|--------|

87/X

三

|      |       |       |        |        |        |        |       |       |
|------|-------|-------|--------|--------|--------|--------|-------|-------|
| .000 | .0807 | .0496 | -.0018 | -.0704 | -.0617 | -.0861 | .3139 | .0359 |
|------|-------|-------|--------|--------|--------|--------|-------|-------|

|        |        |        |        |        |        |        |       |       |
|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| 40.000 | .0958  | -.0131 | -.0655 | -.1129 | -.0363 | -.0521 | .2153 | .0099 |
| 70.000 | -.3042 | -.0383 | 1756   | 0555   | 0520   | -.0397 |       |       |

|        |        |        |       |       |       |       |        |
|--------|--------|--------|-------|-------|-------|-------|--------|
| 90.000 | -.2482 | -.1530 | .0264 | .2271 | .0363 | .1739 | .0397  |
| 90.000 |        |        |       |       |       |       | -.0397 |
|        |        |        |       |       |       |       | -.1158 |

|         | 1960  | 1970  | 1980   | 1990   | 2000   |
|---------|-------|-------|--------|--------|--------|
| 105.000 | .0505 | .3881 | -.0412 | -.0729 | -.1850 |
| 110.000 | .0505 | .3881 | -.0412 | -.0729 | -.1850 |

|         |        |        |       |       |        |        |        |        |
|---------|--------|--------|-------|-------|--------|--------|--------|--------|
| 110.000 | -.3502 | -.1872 | .0601 | .5368 | -.2153 | -.1657 | -.1993 | -.2879 |
| 120.000 |        |        |       |       |        |        |        | -.2837 |

|         |        |       |       |       |        |        |        |        |
|---------|--------|-------|-------|-------|--------|--------|--------|--------|
| 135.000 | 1.1072 | .0001 | .1257 | .3283 | -.2504 | -.1648 | -.1933 | -.6937 |
|---------|--------|-------|-------|-------|--------|--------|--------|--------|

|         |        |        |       |        |        |        |        |
|---------|--------|--------|-------|--------|--------|--------|--------|
| 150.000 | -.1610 | -.0644 | .1343 | -.0690 | -.2946 | -.1362 | -.1693 |
| 165.000 | -.1280 |        | 1.105 |        |        |        |        |

|         |        |       |       |        |        |
|---------|--------|-------|-------|--------|--------|
| 163.000 | -.1250 | .1105 | .0864 | -.0618 | -.2839 |
| 180.000 | -.1204 | .0966 | .0827 |        |        |

[illegible]
$$\begin{aligned} \text{ALPHA} (4) &= 7.984 & \text{BETA} (2) &= -3.864 & \text{MACH} &= .59866 & Q &= 584.93 \end{aligned}$$

SECTION : 1) ORBITER FUSELAGE

ALPHA ( 4 ) = 7.994 BETA ( 2 ) = -3.864 MACH = .59855 Q = 594.55 P = 2395.8 RW/L = 4.8889

## SECTION 1: ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| 1/LB | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1680 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1/LB | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1680 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |

三

[illegible]

|  | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 | 2062 | 2063 | 2064 | 2065 | 2066 | 2067 | 2068 | 2069 | 2070 | 2071 | 2072 | 2073 | 2074 | 2075 | 2076 | 2077 | 2078 | 2079 | 2080 | 2081 | 2082 | 2083 | 2084 | 2085 | 2086 | 2087 | 2088 | 2089 | 2090 | 2091 | 2092 | 2093 | 2094 | 2095 | 2096 | 2097 | 2098 | 2099 | 2100 | 2101 | 2102 | 2103 | 2104 | 2105 | 2106 | 2107 | 2108 | 2109 | 2110 | 2111 | 2112 | 2113 | 2114 | 2115 | 2116 | 2117 | 2118 | 2119 | 2120 | 2121 | 2122 | 2123 | 2124 | 2125 | 2126 | 2127 | 2128 | 2129 | 2130 | 2131 | 2132 | 2133 | 2134 | 2135 | 2136 | 2137 | 2138 | 2139 | 2140 | 2141 | 2142 | 2143 | 2144 | 2145 | 2146 | 2147 | 2148 | 2149 | 2150 | 2151 | 2152 | 2153 | 2154 | 2155 | 2156 | 2157 | 2158 | 2159 | 2160 | 2161 | 2162 | 2163 | 2164 | 2165 | 2166 | 2167 | 2168 | 2169 | 2170 | 2171 | 2172 | 2173 | 2174 | 2175 | 2176 | 2177 | 2178 | 2179 | 2180 | 2181 | 2182 | 2183 | 2184 | 2185 | 2186 | 2187 | 2188 | 2189 | 2190 | 2191 | 2192 | 2193 | 2194 | 2195 | 2196 | 2197 | 2198 | 2199 | 2200 | 2201 | 2202 | 2203 | 2204 | 2205 | 2206 | 2207 | 2208 | 2209 | 2210 | 2211 | 2212 | 2213 | 2214 | 2215 | 2216 | 2217 | 2218 | 2219 | 2220 | 2221 | 2222 | 2223 | 2224 | 2225 | 2226 | 2227 | 2228 | 2229 | 2230 | 2231 | 2232 | 2233 | 2234 | 2235 | 2236 | 2237 | 2238 | 2239 | 2240 | 2241 | 2242 | 2243 | 2244 | 2245 | 2246 | 2247 | 2248 | 2249 | 2250 | 2251 | 2252 | 2253 | 2254 | 2255 | 2256 | 2257 | 2258 | 2259 | 2260 | 2261 | 2262 | 2263 | 2264 | 2265 | 2266 | 2267 | 2268 | 2269 | 2270 | 2271 | 2272 | 2273 | 2274 | 2275 | 2276 | 2277 | 2278 | 2279 | 2280 | 2281 | 2282 | 2283 | 2284 | 2285 | 2286 | 2287 | 2288 | 2289 | 2290 | 2291 | 2292 | 2293 | 2294 | 2295 | 2296 | 2297 | 2298 | 2299 | 2300 | 2301 | 2302 | 2303 | 2304 | 2305 | 2306 | 2307 | 2308 | 2309 | 2310 | 2311 | 2312 | 2313 | 2314 | 2315 | 2316 | 2317 | 2318 | 2319 | 2320 | 2321 | 2322 | 2323 | 2324 | 2325 | 2326 | 2327 | 2328 | 2329 | 2330 | 2331 | 2332 | 2333 | 2334 | 2335 | 2336 | 2337 | 2338 | 2339 | 2340 | 2341 | 2342 | 2343 | 2344 | 2345 | 2346 | 2347 | 2348 | 2349 | 2350 | 2351 | 2352 | 2353 | 2354 | 2355 | 2356 | 2357 | 2358 | 2359 | 2360 | 2361 | 2362 | 2363 | 2364 | 2365 | 2366 | 2367 | 2368 | 2369 | 2370 | 2371 | 2372 | 2373 | 2374 | 2375 | 2376 | 2377 | 2378 | 2379 | 2380 | 2381 | 2382 | 2383 | 2384 | 2385 | 2386 | 2387 | 2388 | 2389 | 2390 | 2391 | 2392 | 2393 | 2394 | 2395 | 2396 | 2397 | 2398 | 2399 | 2400 | 2401 | 2402 | 2403 | 2404 | 2405 | 2406 | 2407 | 2408 | 2409 | 2410 | 2411 | 2412 | 2413 | 2414 | 2415 | 2416 | 2417 | 2418 | 2419 | 2420 | 2421 | 2422 | 2 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|

|        |       |       |       |       |        |        |       |       |       |       |       |
|--------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|
| 40.000 | .4279 | .2161 | .1304 | .0690 | .0139  | -.0155 | .0103 | .0522 | .0716 | .0041 | .1325 |
| 55.000 | .4436 | .2635 | .1749 | .0817 | -.0086 | -.0340 |       |       |       |       |       |

[illegible]

|         |       |       |       |       |       |        |        |        |        |        |        |
|---------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| 90,000  | .5136 | .3778 | .2156 | .1302 | .0817 | -.0332 | -.2224 | -.2380 | -.1465 | -.0999 | -.0867 |
| 120,000 | .2865 | 1593  | 8782  | 1077  | 0050  | 0010   | 0000   | 0000   | 0000   | 0000   | 0000   |

|         |       |       |      |       |         |
|---------|-------|-------|------|-------|---------|
| 140.000 | 6867. | .1595 | 69.0 | .1077 | .0454   |
| 120.000 |       |       |      |       | - .3258 |
|         |       |       |      |       | - .3605 |
|         |       |       |      |       | - .3614 |
|         |       |       |      |       | - .2330 |
|         |       |       |      |       | - .2250 |
|         |       |       |      |       | - .4618 |

|         |       |       |       |       |       |        |        |        |        |        |
|---------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| 150.000 | .1645 | .1044 | .0359 | .1049 | .3810 | -.6889 | -.4648 | -.2072 | -.1179 | -.1063 |
|---------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|

|         |         |
|---------|---------|
| 151.000 | .0033   |
| 162.000 | - .0210 |

|         |         |         |         |         |         |
|---------|---------|---------|---------|---------|---------|
| 165.000 | -1.3921 | -1.3345 | -1.1800 | -1.1046 | -1.0832 |
|---------|---------|---------|---------|---------|---------|

[illegible][illegible]

01/01 - 6280 - 0551 - 8282 - 2051 - 0003 - 0150 - 6230 - 5150 - 1011 - 1550 - 0010 - 0010

|     |       |       |       |       |       |       |       |        |        |
|-----|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| 178 | .6520 | .7290 | .7790 | .8210 | .8790 | .9300 | .9890 | 1.0180 | 1.0460 |
|-----|-------|-------|-------|-------|-------|-------|-------|--------|--------|

PHI

|      |       |       |       |        |        |        |       |       |       |
|------|-------|-------|-------|--------|--------|--------|-------|-------|-------|
| .000 | .0922 | .0550 | .0029 | -.0648 | -.0630 | -.0808 | .0070 | .3059 | .0402 |
|------|-------|-------|-------|--------|--------|--------|-------|-------|-------|

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DATE 10 FEB 76

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XE8837)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 7.994 BETA ( 2 ) = -3.864

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |       |        |        |        |        |        |        |
| 70.000  | -.3516 | -.2593 | -.0914 | .1109 | -.0035 | .0041  | -.0694 |        |        |        |
| 90.000  | -.2615 | -.1921 | -.0234 | .1514 | -.0433 | -.0709 | -.1321 |        |        |        |
| 105.000 |        |        | .0248  | .2767 | -.1278 | -.1248 | -.1874 |        |        |        |
| 110.000 |        |        |        |       |        |        |        | -.2920 |        |        |
| 120.000 | -.2567 | -.1049 | .1381  | .2333 | -.2611 | -.1930 | -.1870 | -.2508 |        |        |
| 135.000 |        |        | .1918  | .1417 | -.2735 | -.1863 | -.2221 |        |        |        |
| 150.000 | -.1094 | -.0092 | .1865  | .0797 | -.2677 | -.1711 | -.1882 |        |        |        |
| 165.000 | -.0900 |        | .1536  |       | -.0389 | -.1404 | -.2478 |        |        |        |
| 180.000 | -.0858 | -.0003 | .1271  | .2535 |        |        |        |        |        |        |

ALPHA ( 4 ) = 7.990 BETA ( 3 ) = .171 MACH = .59666 Q = .594.55 P = 2385.6 RN/L = 4.8889

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660  | .1770   | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|--------|---------|---------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |        |         |         |        |        |        |        |       |
| 20.000  | 1.0310 | .6794 | .2729 | .1489 | .0742 | .0103 |       | -.0034 | -.0053  | .0013   | .0245  | .0585  | .0980  | .1103  |       |
| 40.000  |        |       | .2932 | .1603 | .0845 | .0387 |       | -.0105 | -.0201  | -.0442  | .0259  | .0500  | .0702  | .1307  |       |
| 55.000  |        |       | .3461 | .1679 | .0921 | .0397 |       | -.0103 | -.0454  |         |        |        |        |        |       |
| 70.000  |        |       | .3269 | .1610 | .0796 | .0020 |       | -.0778 | -.1454  |         |        |        |        |        |       |
| 90.000  |        | .3618 | .2886 | .1312 | .0434 | .0105 |       | -.1000 | -.2070  | -.2492  | -.1545 | -.1135 | -.0898 |        |       |
| 120.000 |        |       | .2729 | .1205 | .0531 | .0112 |       | -.1104 | -.2916  | -.2666  | -.1863 | -.1093 | -.0898 |        |       |
| 140.000 |        |       | .2310 | .1026 | .0287 | .0768 |       | -.0217 | -.3931  | -.3899  | -.3150 | -.1590 | -.1431 |        |       |
| 150.000 |        |       | .1685 | .0917 | .0275 | .0884 |       | .3012  | -.5142  | -.4081  | -.1758 | -.0891 | -.0686 |        |       |
| 151.000 |        |       |       |       |       |       |       |        | -.0884  |         |        |        |        |        |       |
| 162.000 |        |       |       |       |       |       |       |        | -.1026  |         |        |        |        |        |       |
| 165.000 |        |       |       |       |       |       |       |        |         | -1.3524 | -.2975 | -.1552 | -.0695 | -.0587 |       |
| 169.000 |        |       |       |       |       |       |       |        |         |         |        |        |        |        |       |
| 174.000 |        |       |       |       |       |       |       |        |         |         |        |        |        |        |       |
| 180.000 | 1.0310 | .2785 | .1282 | .0862 | .0474 | .1081 | .5105 | .3102  | -1.5368 | -.2745  | -.1417 | -.0645 | -.0565 |        |       |

X/LB

PHI

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|
| PHI     |        |        |        |        |        |        |        |       |        |        |
| 40.000  | .0958  | .0648  | .0094  | -.0632 | -.0568 | -.0830 | .1115  |       | .3043  | .0381  |
| 70.000  | .1079  |        | .0157  | -.0561 | -.1124 | -.0538 | -.0200 |       | .1860  | -.0143 |
| 90.000  | -.3624 | -.2840 | -.1203 | .0534  | -.0615 | -.0428 | -.0933 |       |        |        |
| 105.000 | -.2712 | -.1982 | -.0409 | .0828  | -.1282 | -.1211 | -.1525 |       |        |        |
| 110.000 |        |        | .0405  | .1136  | -.1958 | -.1653 | -.2018 |       |        |        |
| 120.000 | -.1806 | -.0677 | .1133  | .1166  | -.2913 | -.2279 | -.2056 |       |        |        |
| 135.000 |        |        | .1188  | .2379  | -.2937 | -.2097 | -.2287 |       |        |        |
| 150.000 | -.0690 | -.0143 | .1420  | .3791  | -.2819 | -.2172 | -.2042 |       |        |        |



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(XE8837)

AVES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA (4) = 7.988 BETA (5) = 8.288 MACH = .58685 Q = 594.55 P = 2385.8 RN/L = 4.8888

## SECTION (1) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230  | .0460  | .0700  | .1120 | .1580 | .1860  | .2040    | .2510  | .3010  | .3780  | .4870  | .5740 |
|---------|-------|--------|--------|--------|--------|-------|-------|--------|----------|--------|--------|--------|--------|-------|
| PHI     | .000  | .6246  | .2283  | .1215  | .0368  |       |       | -.0242 | -.0252   | -.0224 | .0023  | .0425  | .0835  | .0855 |
| 20.000  | .1776 | .0709  | .0007  | -.0377 |        |       |       | -.0593 | -.0679   |        |        |        |        |       |
| 40.000  | .1241 | .0081  | -.0531 | -.0785 |        |       |       | -.1167 | -.1614   | -.1861 | -.0809 | -.0302 | .0172  | .0862 |
| 55.000  | .0552 | -.0671 | -.1188 | -.1710 |        |       |       | -.2260 | -.2684   |        |        |        |        |       |
| 70.000  | .0317 | -.0789 | -.1399 | -.1288 |        |       |       | -.2149 | -.3003   | -.3061 | -.1872 | -.1437 | -.1228 |       |
| 90.000  | .0148 | -.0465 | -.0789 | -.1252 | -.1221 |       |       | -.2345 | -.3983   | -.3110 | -.1756 | -.1117 | -.0948 |       |
| 120.000 |       | .0577  | -.0474 | -.1114 | -.0538 |       |       | -.2063 | -.5171   | -.3582 | -.2429 | -.0784 | -.0625 |       |
| 140.000 |       |        |        |        |        |       |       |        | -.6100   |        |        |        |        |       |
| 150.000 |       | .0545  | .0098  | -.0526 | -.0088 |       |       | .0775  | -.7800   | -.3331 | -.1574 | -.0818 | -.0648 |       |
| 162.000 |       |        |        |        |        |       |       | -.3429 |          |        |        |        |        |       |
| 165.000 |       |        |        |        |        |       |       | -.3356 |          |        |        |        |        |       |
| 169.000 |       |        |        |        |        |       |       |        | -.1.2997 | -.2886 | -.1606 | -.0883 | -.0832 |       |
| 174.000 |       |        |        |        |        |       |       | .2314  |          |        |        |        |        |       |
| 180.000 | .9549 | .1837  | .0920  | .0261  | -.0113 | .0555 | .3915 | .2015  | -.1.5347 | -.3195 | -.1960 | -.1240 | -.1083 |       |

X/LB

PHI

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1860  | .2040  | .2510 | .3010 | .3780 | .4870 | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|-------|-------|
| PHI     | .000   | .0532  | .0033  | -.0727 | -.0686 | -.0892 | -.0032 | .3061  | .0315  |       |       |       |       |       |
| 20.000  | .0827  | .0805  | .0052  | -.0663 | -.1369 | -.0688 | -.0373 | .1530  | -.0508 |       |       |       |       |       |
| 40.000  | -.3724 | -.3297 | -.2002 | -.0726 | -.1583 | -.1192 | -.1391 |        |        |       |       |       |       |       |
| 55.000  | -.2755 | -.2507 | -.1522 | -.0738 | -.2360 | -.1812 | -.1807 |        |        |       |       |       |       |       |
| 70.000  |        |        | -.0995 | -.0156 | -.3687 | -.2536 | -.2440 |        |        |       |       |       |       |       |
| 90.000  |        |        |        |        |        |        |        | -.2871 |        |       |       |       |       |       |
| 110.000 | -.1561 | -.1458 | -.0535 | .1681  | -.5079 | -.2982 | -.2988 |        |        |       |       |       |       |       |
| 120.000 |        |        | .0462  | .4084  | -.4744 | -.3318 | -.2984 |        |        |       |       |       |       |       |
| 135.000 | -.1002 | -.0618 | .0697  | .1829  | -.4793 | -.3822 | -.2946 |        |        |       |       |       |       |       |
| 150.000 | -.1095 |        | .0829  |        | -.3870 | -.3897 | -.2620 |        |        |       |       |       |       |       |
| 165.000 | -.1294 | -.0437 | .1050  | .1565  |        |        |        |        |        |       |       |       |       |       |

ALPHA (5) = 11.959 BETA (1) = -7.860 MACH = .58676 Q = 594.79 P = 2385.8 RN/L = 4.8888

## SECTION (1) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1860 | .2040  | .2510  | .3010  | .3780  | .4870  | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | .7681 | .3883 | .2169 | .1471 |       |       | .0490 | .0416  | .0399  | .0585  | .0915  | .1400  | .1608 |
| 20.000  | .9203 |       | .4551 | .2926 | .1777 | .0916 |       | .0658 | .0507  |        |        |        |        |       |
| 40.000  |       |       | .5885 | .3759 | .2708 | .1928 |       | .1208 | .0856  | .0862  | .1358  | .1921  | .1656  | .2188 |
| 55.000  |       |       | .5746 | .3677 | .2827 | .1830 |       | .0746 | -.0145 |        |        |        |        |       |
| 70.000  |       |       | .4912 | .3161 | .2108 | .1559 |       | .0419 | -.0773 | -.1779 | -.1205 | -.0930 | -.0914 |       |
| 90.000  | .5498 |       | .4105 | .2585 | .1899 | .1239 |       | .0177 | -.1741 | -.2168 | -.1636 | -.1378 | -.1395 |       |
| 120.000 |       |       | .2168 | .0885 | .0080 | .0471 |       | .0381 | -.3185 | -.4346 | -.5846 | -.4828 | -.5106 |       |



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(XEROX)

AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

|               |        |              |        |
|---------------|--------|--------------|--------|
| ALPHA ( 5 ) = | 11.981 | BETA ( 2 ) = | -3.846 |
|---------------|--------|--------------|--------|

| SECTION ( ) ORBITER FUSELAGE | DEPENDENT VARIABLE CP |
|------------------------------|-----------------------|
| 1                            | 0.0000                |
| 2                            | 0.0000                |
| 3                            | 0.0000                |
| 4                            | 0.0000                |
| 5                            | 0.0000                |
| 6                            | 0.0000                |
| 7                            | 0.0000                |
| 8                            | 0.0000                |
| 9                            | 0.0000                |
| 10                           | 0.0000                |
| 11                           | 0.0000                |
| 12                           | 0.0000                |
| 13                           | 0.0000                |
| 14                           | 0.0000                |
| 15                           | 0.0000                |
| 16                           | 0.0000                |
| 17                           | 0.0000                |
| 18                           | 0.0000                |
| 19                           | 0.0000                |
| 20                           | 0.0000                |
| 21                           | 0.0000                |
| 22                           | 0.0000                |
| 23                           | 0.0000                |
| 24                           | 0.0000                |
| 25                           | 0.0000                |
| 26                           | 0.0000                |
| 27                           | 0.0000                |
| 28                           | 0.0000                |
| 29                           | 0.0000                |
| 30                           | 0.0000                |
| 31                           | 0.0000                |
| 32                           | 0.0000                |
| 33                           | 0.0000                |
| 34                           | 0.0000                |
| 35                           | 0.0000                |
| 36                           | 0.0000                |
| 37                           | 0.0000                |
| 38                           | 0.0000                |
| 39                           | 0.0000                |
| 40                           | 0.0000                |
| 41                           | 0.0000                |
| 42                           | 0.0000                |
| 43                           | 0.0000                |
| 44                           | 0.0000                |
| 45                           | 0.0000                |
| 46                           | 0.0000                |
| 47                           | 0.0000                |
| 48                           | 0.0000                |
| 49                           | 0.0000                |
| 50                           | 0.0000                |
| 51                           | 0.0000                |
| 52                           | 0.0000                |
| 53                           | 0.0000                |
| 54                           | 0.0000                |
| 55                           | 0.0000                |
| 56                           | 0.0000                |
| 57                           | 0.0000                |
| 58                           | 0.0000                |
| 59                           | 0.0000                |
| 60                           | 0.0000                |
| 61                           | 0.0000                |
| 62                           | 0.0000                |
| 63                           | 0.0000                |
| 64                           | 0.0000                |
| 65                           | 0.0000                |
| 66                           | 0.0000                |
| 67                           | 0.0000                |
| 68                           | 0.0000                |
| 69                           | 0.0000                |
| 70                           | 0.0000                |
| 71                           | 0.0000                |
| 72                           | 0.0000                |
| 73                           | 0.0000                |
| 74                           | 0.0000                |
| 75                           | 0.0000                |
| 76                           | 0.0000                |
| 77                           | 0.0000                |
| 78                           | 0.0000                |
| 79                           | 0.0000                |
| 80                           | 0.0000                |
| 81                           | 0.0000                |
| 82                           | 0.0000                |
| 83                           | 0.0000                |
| 84                           | 0.0000                |
| 85                           | 0.0000                |
| 86                           | 0.0000                |
| 87                           | 0.0000                |
| 88                           | 0.0000                |
| 89                           | 0.0000                |
| 90                           | 0.0000                |
| 91                           | 0.0000                |
| 92                           | 0.0000                |
| 93                           | 0.0000                |
| 94                           | 0.0000                |
| 95                           | 0.0000                |
| 96                           | 0.0000                |
| 97                           | 0.0000                |
| 98                           | 0.0000                |
| 99                           | 0.0000                |
| 100                          | 0.0000                |

|      |         |       |       |        |        |        |       |       |         |        |        |        |        |       |       |
|------|---------|-------|-------|--------|--------|--------|-------|-------|---------|--------|--------|--------|--------|-------|-------|
| X/LB | .0000   | .0080 | .0230 | .0460  | .0700  | .1120  | .1580 | .1660 | .1770   | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
| PHI  | 180.000 | .9483 | .1134 | -.0121 | -.0327 | -.0535 | .0294 | .2027 | -1.0436 | -.2930 | -.1543 | -.0822 | -.0942 |       |       |

2460'- - 0942  
2380'- - 0822  
5451'- - 2930  
5648'- - 0548

|      |       |       |       |       |       |       |       |       |        |        |
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| X/LB | .6520 | .7290 | .7790 | .8210 | .8790 | .9210 | .9620 | .9990 | 1.0180 | 1.0460 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|

PHI

| Variable                    | Mean  | Standard Deviation | Minimum | Maximum |
|-----------------------------|-------|--------------------|---------|---------|
| Age                         | 38.5  | 12.5               | 25      | 65      |
| Gender                      | 0.5   | 0.5                | 0       | 1       |
| Education                   | 12.5  | 1.5                | 10      | 16      |
| Income                      | 45000 | 15000              | 20000   | 80000   |
| Health                      | 0.8   | 0.2                | 0       | 1       |
| Marital Status              | 0.6   | 0.5                | 0       | 1       |
| Employment                  | 0.9   | 0.1                | 0       | 1       |
| Home Ownership              | 0.7   | 0.4                | 0       | 1       |
| Vehicle Ownership           | 0.8   | 0.4                | 0       | 1       |
| Life Satisfaction           | 4.5   | 1.5                | 1       | 7       |
| Life Satisfaction (Control) | 4.5   | 1.5                | 1       | 7       |

|        |        |        |        |        |        |        |        |        |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 40.000 | .1958  | .0865  | .0000  | -.0746 | -.0063 | -.0137 | .2129  | -.0015 |
| 70.000 | -.4940 | -.3474 | -.1426 | .0869  | -.0088 | .0084  | -.0512 |        |

|        |         |         |         |       |         |         |         |
|--------|---------|---------|---------|-------|---------|---------|---------|
| 90.000 | - .3607 | - .2398 | - .0570 | .1414 | - .0447 | - .0639 | - .1183 |
| 90.000 | - .4740 | - .3434 | - .1420 | .0669 | - .0068 | .0084   | - .0512 |

|         | 1976    | 1977  | 1978   | 1979   | 1980   |
|---------|---------|-------|--------|--------|--------|
| 105.000 | - .0097 | .2777 | -.4192 | -.1186 | -.1836 |

|         |        |        |      |      |        |        |        |
|---------|--------|--------|------|------|--------|--------|--------|
| 110.000 | - 3032 | - 1030 | 0664 | 1702 | - 2705 | - 2006 | - 1981 |
| 120.000 |        |        |      |      |        |        | - 2407 |
|         |        |        |      |      |        |        | - 2928 |

|         |        |        |       |       |        |        |        |        |
|---------|--------|--------|-------|-------|--------|--------|--------|--------|
| 120.000 | -.5435 | -.1030 | .0664 | .1702 | -.2703 | -.2006 | -.1891 | -.2547 |
| 135.000 |        |        | .0670 | .1043 | -.2724 | -.1958 | -.2233 |        |

|         |        |        |       |       |        |        |        |
|---------|--------|--------|-------|-------|--------|--------|--------|
| 150.000 | -.1978 | -.0937 | .0631 | .2365 | -.2163 | -.1792 | -.1894 |
|---------|--------|--------|-------|-------|--------|--------|--------|

| Account | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 | 2062 | 2063 | 2064 | 2065 | 2066 | 2067 | 2068 | 2069 | 2070 | 2071 | 2072 | 2073 | 2074 | 2075 | 2076 | 2077 | 2078 | 2079 | 2080 | 2081 | 2082 | 2083 | 2084 | 2085 | 2086 | 2087 | 2088 | 2089 | 2090 | 2091 | 2092 | 2093 | 2094 | 2095 | 2096 | 2097 | 2098 | 2099 | 2100 | 2101 | 2102 | 2103 | 2104 | 2105 | 2106 | 2107 | 2108 | 2109 | 2110 | 2111 | 2112 | 2113 | 2114 | 2115 | 2116 | 2117 | 2118 | 2119 | 2120 | 2121 | 2122 | 2123 | 2124 | 2125 | 2126 | 2127 | 2128 | 2129 | 2130 | 2131 | 2132 | 2133 | 2134 | 2135 | 2136 | 2137 | 2138 | 2139 | 2140 | 2141 | 2142 | 2143 | 2144 | 2145 | 2146 | 2147 | 2148 | 2149 | 2150 | 2151 | 2152 | 2153 | 2154 | 2155 | 2156 | 2157 | 2158 | 2159 | 2160 | 2161 | 2162 | 2163 | 2164 | 2165 | 2166 | 2167 | 2168 | 2169 | 2170 | 2171 | 2172 | 2173 | 2174 | 2175 | 2176 | 2177 | 2178 | 2179 | 2180 | 2181 | 2182 | 2183 | 2184 | 2185 | 2186 | 2187 | 2188 | 2189 | 2190 | 2191 | 2192 | 2193 | 2194 | 2195 | 2196 | 2197 | 2198 | 2199 | 2200 | 2201 | 2202 | 2203 | 2204 | 2205 | 2206 | 2207 | 2208 | 2209 | 2210 | 2211 | 2212 | 2213 | 2214 | 2215 | 2216 | 2217 | 2218 | 2219 | 2220 | 2221 | 2222 | 2223 | 2224 | 2225 | 2226 | 2227 | 2228 | 2229 | 2230 | 2231 | 2232 | 2233 | 2234 | 2235 | 2236 | 2237 | 2238 | 2239 | 2240 | 2241 | 2242 | 2243 | 2244 | 2245 | 2246 | 2247 | 2248 | 2249 | 2250 | 2251 | 2252 | 2253 | 2254 | 2255 | 2256 | 2257 | 2258 | 2259 | 2260 | 2261 | 2262 | 2263 | 2264 | 2265 | 2266 | 2267 | 2268 | 2269 | 2270 | 2271 | 2272 | 2273 | 2274 | 2275 | 2276 | 2277 | 2278 | 2279 | 2280 | 2281 | 2282 | 2283 | 2284 | 2285 | 2286 | 2287 | 2288 | 2289 | 2290 | 2291 | 2292 | 2293 | 2294 | 2295 | 2296 | 2297 | 2298 | 2299 | 2300 | 2301 | 2302 | 2303 | 2304 | 2305 | 2306 | 2307 | 2308 | 2309 | 2310 | 2311 | 2312 | 2313 | 2314 | 2315 | 2316 | 2317 | 2318 | 2319 | 2320 | 2321 | 2322 | 2323 | 2324 | 2325 | 2326 | 2327 | 2328 | 2329 | 2330 | 2331 | 2332 | 2333 | 2334 | 2335 | 2336 | 2337 | 2338 | 2339 | 2340 | 2341 | 2342 | 2343 | 2344 | 2345 | 2346 | 2347 | 2348 | 2349 | 2350 | 2351 | 2352 | 2353 | 2354 | 2355 | 2356 | 2357 | 2358 | 2359 | 2360 | 2361 | 2362</ |
|---------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------|
|---------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------|

|         |         |         |       |       |
|---------|---------|---------|-------|-------|
| 120.000 | - .1233 | - .0406 | .0935 | .3599 |
|---------|---------|---------|-------|-------|

|               |         |              |      |      |   |        |   |   |        |
|---------------|---------|--------------|------|------|---|--------|---|---|--------|
| ALPHA ( 5 ) = | .11.991 | BETA ( 3 ) = | .172 | MACH | = | .59676 | Q | = | 594.79 |
|---------------|---------|--------------|------|------|---|--------|---|---|--------|

|               |       |              |      |      |   |        |   |   |        |   |   |        |      |   |        |
|---------------|-------|--------------|------|------|---|--------|---|---|--------|---|---|--------|------|---|--------|
| ALPHA ( 5 ) = | 1.991 | BETA ( 3 ) = | .172 | MACH | = | .59676 | Q | = | 594.79 | P | = | 2395.8 | RN/L | = | 4.6888 |
|---------------|-------|--------------|------|------|---|--------|---|---|--------|---|---|--------|------|---|--------|

## SECTION : 1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

|      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| X/LB | .0000 | .0080 | .0230 | .0450 | .0700 | .1120 | .1580 | .1650 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
| PHI  | .000  | .9567 | .8176 | .4115 | .2648 | .1750 | .0700 | .0597 | .0606 | .0837 | .1141 | .1632 | .1733 |       |       |

[illegible]

|        | 0.000 | .9567 | .8176 | .4115 | .2648 | .1750 | .0700 | .0597 | .0806 | .0837 | .1141 | .1632 | .1733 |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 20 000 |       |       |       | 4.105 | 3590  | 1610  | 1015  | 0613  |       |       |       |       |       |

|  | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 | 2062 | 2063 | 2064 | 2065 | 2066 | 2067 | 2068 | 2069 | 2070 | 2071 | 2072 | 2073 | 2074 | 2075 | 2076 | 2077 | 2078 | 2079 | 2080 | 2081 | 2082 | 2083 | 2084 | 2085 | 2086 | 2087 | 2088 | 2089 | 2090 | 2091 | 2092 | 2093 | 2094 | 2095 | 2096 | 2097 | 2098 | 2099 | 2100 | 2101 | 2102 | 2103 | 2104 | 2105 | 2106 | 2107 | 2108 | 2109 | 2110 | 2111 | 2112 | 2113 | 2114 | 2115 | 2116 | 2117 | 2118 | 2119 | 2120 | 2121 | 2122 | 2123 | 2124 | 2125 | 2126 | 2127 | 2128 | 2129 | 2130 | 2131 | 2132 | 2133 | 2134 | 2135 | 2136 | 2137 | 2138 | 2139 | 2140 | 2141 | 2142 | 2143 | 2144 | 2145 | 2146 | 2147 | 2148 | 2149 | 2150 | 2151 | 2152 | 2153 | 2154 | 2155 | 2156 | 2157 | 2158 | 2159 | 2160 | 2161 | 2162 | 2163 | 2164 | 2165 | 2166 | 2167 | 2168 | 2169 | 2170 | 2171 | 2172 | 2173 | 2174 | 2175 | 2176 | 2177 | 2178 | 2179 | 2180 | 2181 | 2182 | 2183 | 2184 | 2185 | 2186 | 2187 | 2188 | 2189 | 2190 | 2191 | 2192 | 2193 | 2194 | 2195 | 2196 | 2197 | 2198 | 2199 | 2200 | 2201 | 2202 | 2203 | 2204 | 2205 | 2206 | 2207 | 2208 | 2209 | 2210 | 2211 | 2212 | 2213 | 2214 | 2215 | 2216 | 2217 | 2218 | 2219 | 2220 | 2221 | 2222 | 2223 | 2224 | 2225 | 2226 | 2227 | 2228 | 2229 | 2230 | 2231 | 2232 | 2233 | 2234 | 2235 | 2236 | 2237 | 2238 | 2239 | 2240 | 2241 | 2242 | 2243 | 2244 | 2245 | 2246 | 2247 | 2248 | 2249 | 2250 | 2251 | 2252 | 2253 | 2254 | 2255 | 2256 | 2257 | 2258 | 2259 | 2260 | 2261 | 2262 | 2263 | 2264 | 2265 | 2266 | 2267 | 2268 | 2269 | 2270 | 2271 | 2272 | 2273 | 2274 | 2275 | 2276 | 2277 | 2278 | 2279 | 2280 | 2281 | 2282 | 2283 | 2284 | 2285 | 2286 | 2287 | 2288 | 2289 | 2290 | 2291 | 2292 | 2293 | 2294 | 2295 | 2296 | 2297 | 2298 | 2299 | 2300 | 2301 | 2302 | 2303 | 2304 | 2305 | 2306 | 2307 | 2308 | 2309 | 2310 | 2311 | 2312 | 2313 | 2314 | 2315 | 2316 | 2317 | 2318 | 2319 | 2320 | 2321 | 2322 | 2323 | 2324 | 2325 | 2326 | 2327 | 2328 | 2329 | 2330 | 2331 | 2332 | 2333 | 2334 | 2335 | 2336 | 2337 | 2338 | 2339 | 2340 | 2341 | 2342 | 2343 | 2344 | 2345 | 2346 | 2347 | 2348 | 2349 | 2350 | 2351 | 2352 | 2353 | 2354 | 2355 | 2356 | 2357 | 2358 | 2359 | 2360 | 2361 | 2362 | 2363 | 2364 | 2365 | 2366 | 2367 | 2368 | 2369 | 2370 | 2371 | 2372 | 2373 | 2374 | 2375 | 2376 | 2377 | 2378 | 2379 | 2380 | 2381 | 2382 | 2383 | 2384 | 2385 | 2386 | 2387 | 2388 | 2389 | 2390 | 2391 | 2392 | 2393 | 2394 | 2395 | 2396 | 2397 | 2398 | 2399 | 2400 | 2401 | 2402 | 2403 | 2404 | 2405 | 2406 | 2407 | 2408 | 2409 | 2410 | 2411 | 2412 | 2 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|

| Variable     | Mean   | SD    | Alpha | Reliability |
|--------------|--------|-------|-------|-------------|
| 1. Age       | 55.000 | 12.77 | .1655 | .3287       |
| 2. Education | 12.333 | 1.033 | .0759 | -.0169      |
| 3. Income    | 10.333 | 1.033 | .0331 | -.0997      |
| 4. Health    | 10.111 | 1.011 | .1712 |             |
| 5. Social    | 10.111 | 1.011 |       |             |
| 6. Total     | 10.000 | 1.000 |       |             |

[illegible]

| Year       | 1960   | 1961   | 1962   | 1963   | 1964   | 1965   | 1966   | 1967   | 1968   | 1969   | 1970   | 1971   | 1972   | 1973   | 1974   | 1975   | 1976   | 1977   | 1978   | 1979   | 1980   | 1981   | 1982   | 1983   | 1984   | 1985   | 1986   | 1987   | 1988   | 1989   | 1990   | 1991   | 1992   | 1993   | 1994   | 1995   | 1996   | 1997   | 1998   | 1999   | 2000   | 2001   | 2002   | 2003   | 2004   | 2005   | 2006   | 2007   | 2008   | 2009   | 2010   | 2011   | 2012   | 2013   | 2014   | 2015   | 2016   | 2017   | 2018   | 2019   | 2020   | 2021   | 2022   | 2023   | 2024   | 2025   | 2026   | 2027   | 2028   | 2029   | 2030   | 2031   | 2032   | 2033   | 2034   | 2035   | 2036   | 2037   | 2038   | 2039   | 2040   | 2041   | 2042   | 2043   | 2044   | 2045   | 2046   | 2047   | 2048   | 2049   | 2050    | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 | 2062 | 2063 | 2064 | 2065 | 2066 | 2067 | 2068 | 2069 | 2070 | 2071 | 2072 | 2073 | 2074 | 2075 | 2076 | 2077 | 2078 | 2079 | 2080 | 2081 | 2082 | 2083 | 2084 | 2085 | 2086 | 2087 | 2088 | 2089 | 2090 | 2091 | 2092 | 2093 | 2094 | 2095 | 2096 | 2097 | 2098 | 2099 | 2100 |
|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Population | 10,000 | 11,000 | 12,000 | 13,000 | 14,000 | 15,000 | 16,000 | 17,000 | 18,000 | 19,000 | 20,000 | 21,000 | 22,000 | 23,000 | 24,000 | 25,000 | 26,000 | 27,000 | 28,000 | 29,000 | 30,000 | 31,000 | 32,000 | 33,000 | 34,000 | 35,000 | 36,000 | 37,000 | 38,000 | 39,000 | 40,000 | 41,000 | 42,000 | 43,000 | 44,000 | 45,000 | 46,000 | 47,000 | 48,000 | 49,000 | 50,000 | 51,000 | 52,000 | 53,000 | 54,000 | 55,000 | 56,000 | 57,000 | 58,000 | 59,000 | 60,000 | 61,000 | 62,000 | 63,000 | 64,000 | 65,000 | 66,000 | 67,000 | 68,000 | 69,000 | 70,000 | 71,000 | 72,000 | 73,000 | 74,000 | 75,000 | 76,000 | 77,000 | 78,000 | 79,000 | 80,000 | 81,000 | 82,000 | 83,000 | 84,000 | 85,000 | 86,000 | 87,000 | 88,000 | 89,000 | 90,000 | 91,000 | 92,000 | 93,000 | 94,000 | 95,000 | 96,000 | 97,000 | 98,000 | 99,000 | 100,000 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

|          |       |       |        |       |        |        |        |        |        |        |
|----------|-------|-------|--------|-------|--------|--------|--------|--------|--------|--------|
| 17 0.000 | .1634 | .0133 | -.0433 | .0161 | -.0436 | -.4209 | -.4037 | -.4019 | -.6039 | -.6169 |
| 18 0.000 |       |       |        |       |        | -.5702 |        |        |        |        |

|         |       |       |        |       |       |        |        |        |        |        |
|---------|-------|-------|--------|-------|-------|--------|--------|--------|--------|--------|
| 150.000 | .0451 | .0017 | -.0507 | .0301 | .2759 | -.7951 | -.4456 | -.2010 | -.1085 | -.1158 |
|---------|-------|-------|--------|-------|-------|--------|--------|--------|--------|--------|

|         |       |
|---------|-------|
| 151.000 | -1284 |
| 162.000 | -1571 |

|         |         |         |         |         |         |
|---------|---------|---------|---------|---------|---------|
| 162.000 | -1.4570 | -0.3191 | -0.1611 | -0.0794 | -0.0824 |
| 165.000 |         |         |         |         |         |
|         | -0.1371 |         |         |         |         |

|         |       |        |       |
|---------|-------|--------|-------|
| 169.000 | .2954 | 11.219 | 1.000 |
|---------|-------|--------|-------|

|         |      |      |      |   |       |   |      |      |                                     |
|---------|------|------|------|---|-------|---|------|------|-------------------------------------|
| 174.000 |      |      |      |   | .4596 |   |      |      |                                     |
| 190 000 | 0857 | 1071 | 0030 | - | 0050  | - | 0753 | 0030 |                                     |
|         |      |      |      |   |       |   |      | 2400 | -1 7407 - 3853 - 1430 = 0711 - 0749 |

000.000 1/26 1/01 5300 5000 5055 640. 643. 647.1- /54.1- 6893. 6941. 7110. 8470.

|      |       |       |       |       |       |       |       |       |        |        |
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| 4/15 | .6520 | .7290 | .7730 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|

|     |      |       |       |       |        |        |        |       |       |       |
|-----|------|-------|-------|-------|--------|--------|--------|-------|-------|-------|
| PHI | .000 | .1662 | .1288 | .0750 | -.0037 | -.0201 | -.0480 | .0326 | .3330 | .0537 |
|-----|------|-------|-------|-------|--------|--------|--------|-------|-------|-------|

|        |       |       |        |      |        |      |       |        |
|--------|-------|-------|--------|------|--------|------|-------|--------|
| 40.000 | .1952 | .0826 | -.0028 | 4660 | -.0268 | 4004 | .2027 | -.0118 |
|--------|-------|-------|--------|------|--------|------|-------|--------|

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE6837)

ALPHA ( 5 ) = 11.991 BETA ( 3 ) = .172

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |       |        |        |        |        |        |        |
| 70.000  | -.5180 | -.3778 | -.1829 | .0165 | -.0832 | -.0534 | -.0935 |        |        |        |
| 90.000  | -.3765 | -.2658 | -.0867 | .0548 | -.1445 | -.1134 | -.1438 |        |        |        |
| 105.000 |        |        | -.0016 | .1037 | -.2100 | -.1674 | -.1990 |        |        |        |
| 110.000 |        |        |        |       |        |        |        | -.2890 |        |        |
| 120.000 | -.2320 | -.1113 | .0714  | .1732 | -.2983 | -.2382 | -.2106 | -.2461 |        |        |
| 135.000 |        |        | .0404  | .3281 | -.3131 | -.2332 | -.2380 |        |        |        |
| 150.000 | -.1616 | -.0912 | .0966  | .4797 | -.3015 | -.2359 | -.2133 |        |        |        |
| 165.000 | -.1085 |        | .1252  |       | -.1501 | -.2347 | -.2239 |        |        |        |
| 180.000 | -.0967 | -.0175 | .1348  | .4080 |        |        |        |        |        |        |

| ALPHA ( 5 ) = 11.985 | BETA ( 4 ) = 4.243 | MACH = .59676 | Q = 594.79 | P = 2385.8 | RN/L = 4.8888 |
|----------------------|--------------------|---------------|------------|------------|---------------|
|----------------------|--------------------|---------------|------------|------------|---------------|

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460  | .0700  | .1120  | .1580 | .1660  | .1770  | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|-------|-------|--------|--------|--------|-------|--------|--------|---------|--------|--------|--------|--------|-------|
| PHI     |       |       |       |        |        |        |       |        |        |         |        |        |        |        |       |
| 20.000  |       |       | .3997 | .2538  | .1588  |        |       | .0609  |        | .0516   | .0561  | .0728  | .1075  | .1539  | .1685 |
| 40.000  | .9394 | .8023 | .3649 | .2338  | .1282  | .0681  |       | .0270  |        | .0083   |        |        |        |        |       |
| 55.000  |       |       | .3057 | .1647  | .0798  | .0225  |       | -.0338 |        | -.0948  | -.1055 | -.0277 | .0315  | .0850  | .1716 |
| 70.000  |       |       | .1836 | .0330  | -.0389 | -.1183 |       | -.1857 |        | -.2489  |        |        |        |        |       |
| 90.000  |       | .1190 | .1300 | -.0059 | -.0679 | -.0746 |       | -.1743 |        | -.2714  | -.3264 | -.2357 | -.1912 | -.1922 |       |
| 120.000 |       |       | .1105 | -.0185 | -.0553 | -.0793 |       | -.1721 |        | -.3517  | -.3234 | -.2265 | -.1685 | -.1812 |       |
| 140.000 |       |       | .0617 | -.0342 | -.0893 | -.0193 |       | -.1095 |        | -.4761  | -.3951 | -.3339 | -.1702 | -.1424 |       |
| 150.000 |       |       | .0196 | -.0147 | -.0724 | .0033  |       | .1704  |        | -.6106  | -.3796 | -.1645 | -.0857 | -.0866 |       |
| 151.000 |       |       |       |        |        |        |       |        | -.2350 |         |        |        |        |        |       |
| 162.000 |       |       |       |        |        |        |       |        | -.2571 |         |        |        |        |        |       |
| 165.000 |       |       |       |        |        |        |       |        |        | -.14069 | -.2969 | -.1503 | -.0769 | -.0797 |       |
| 169.000 |       |       |       |        |        |        |       |        |        |         |        |        |        |        |       |
| 174.000 | .9394 | .0744 | .0070 | -.0185 | -.0517 | .0299  | .4125 | .2487  |        |         |        |        |        |        |       |
| 180.000 |       |       |       |        |        |        |       | .2326  |        |         |        |        |        |        |       |

X/LB

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|
| PHI     |        |        |        |        |        |        |        |       |        |        |
| 40.000  | .1635  | .1264  | .0596  | -.0162 | -.0260 | -.0594 | .0239  |       |        |        |
| 70.000  | .1687  | .0767  | -.0103 | -.0985 | -.0375 | -.0134 |        | .3289 | .0465  |        |
| 90.000  | -.5174 | -.4047 | -.2160 | -.0542 | -.1418 | -.0991 | -.1249 | .1812 | -.0233 |        |
| 105.000 | -.3833 | -.3002 | -.1331 | -.0637 | -.2253 | -.1741 | -.1679 |       |        |        |
| 110.000 |        |        | -.0761 | -.0311 | -.3373 | -.2381 | -.2356 |       |        |        |
| 120.000 | -.2023 | -.1728 | -.0470 | .0316  | -.3988 | -.3133 | -.2655 |       |        |        |
| 150.000 | -.1142 | -.0494 | .0020  | .3678  | -.5744 | -.2614 | -.2539 |       |        |        |
|         |        |        | .1193  | .4279  | -.3974 | -.2958 | -.2455 |       |        |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE6837)

ALPHA ( 5 ) = 11.985 BETA ( 4 ) = 4.243

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|--------|--------|-------|-------|--------|--------|--------|-------|--------|--------|
| PHI     |        |        |       |       |        |        |        |       |        |        |
| 165.000 | -.1000 |        | .1063 |       |        |        |        |       |        |        |
| 180.000 | -.1204 | -.0313 | .1040 | .4226 | -.2535 | -.3071 | -.2102 |       |        |        |

ALPHA ( 5 ) = 11.975 BETA ( 5 ) = 8.313 MACH = .59678 Q = .594.79 P = 2386.8 RN/L = 4.8888

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230  | .0460  | .0700  | .1120  | .1580 | .1660  | .1770 | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|--------|--------|--------|--------|--------|-------|--------|-------|--------|-------|-------|-------|-------|-------|
| PHI     |       |        |        |        |        |        |       |        |       |        |       |       |       |       |       |
| .000    | .8809 | .7557  | .3698  | .2329  | .1360  |        |       | .0503  |       | .0385  | .0371 | .0634 | .0960 | .1440 | .1536 |
| 20.000  |       |        | .3019  | .1703  | .0794  | .0295  |       | -.0041 |       | -.0266 |       |       |       |       |       |
| 40.000  |       |        | .1696  | .0628  | -.0179 |        |       | -.1156 |       | -.1906 |       |       |       |       |       |
| 55.000  |       |        | .0291  | -.1054 | -.1524 | -.2307 |       | -.2761 |       | -.3278 |       |       |       |       |       |
| 70.000  |       |        | -.0056 | -.1079 | -.1623 | -.1367 |       | -.2205 |       | -.3201 |       |       |       |       |       |
| 90.000  |       | -.0623 | -.0004 | -.0939 | -.1341 | -.1353 |       | -.2255 |       | -.3948 |       |       |       |       |       |
| 120.000 |       |        | -.0135 | -.0960 | -.1458 | -.0671 |       | -.1855 |       | -.5166 |       |       |       |       |       |
| 140.000 |       |        |        |        |        |        |       | -.6157 |       | -.8285 |       |       |       |       |       |
| 150.000 |       |        | -.0416 | -.0567 | -.1162 | -.0325 |       | .0629  |       | -.8285 |       |       |       |       |       |
| 151.000 |       |        |        |        |        |        |       | -.3583 |       |        |       |       |       |       |       |
| 162.000 |       |        |        |        |        |        |       | -.3774 |       |        |       |       |       |       |       |
| 165.000 |       |        |        |        |        |        |       |        |       |        |       |       |       |       |       |
| 169.000 |       |        |        |        |        |        |       |        |       |        |       |       |       |       |       |
| 174.000 |       |        |        |        |        |        |       |        |       |        |       |       |       |       |       |
| 180.000 |       |        |        |        |        |        |       |        |       |        |       |       |       |       |       |

| X/LB    | .6520 | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|-------|--------|--------|--------|--------|--------|--------|-------|--------|--------|
| PHI     |       |        |        |        |        |        |        |       |        |        |
| .000    | .1512 | .1178  | .0658  | -.0063 | -.0264 | -.0604 | .0156  |       | .3277  | .0415  |
| 40.000  |       |        | .0594  | -.0148 | -.1062 | -.0506 | -.0097 |       | .1742  | -.0418 |
| 70.000  |       |        | -.5054 | -.4107 | -.2553 | -.1342 | -.1951 |       |        |        |
| 90.000  |       |        | -.3887 | -.3447 | -.2199 | -.1402 | -.2716 |       |        |        |
| 105.000 |       |        |        | -.1591 | -.1245 | -.4333 | -.2845 |       |        |        |
| 110.000 |       |        |        |        |        |        |        |       |        |        |
| 120.000 |       | -.2335 | -.2526 | -.1121 | .0313  | -.5167 | -.3838 |       |        |        |
| 135.000 |       |        |        | .0438  | .4577  | -.5171 | -.3520 |       |        |        |
| 150.000 |       |        | -.1195 | -.0799 | .0505  | -.5277 | -.4058 |       |        |        |
| 165.000 |       |        | -.1559 | .0192  |        | -.4693 | -.4107 |       |        |        |
| 180.000 |       |        | -.1981 | -.1384 | .0051  |        |        |       |        |        |



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TABULATED PRESSURE DATA - QAL48 ( AMES 11-073-1 )

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AMES 11-073(QAL48) -140A/B/C/R ORB FUSELAGE

(XE8838)

ALPHA ( 1 ) = -3.940 BETA ( 2 ) = .193 MACH = 1.3931 Q = 600.20 P = 441.83 RN/L = 2.9112

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4870  | .5740  |
|---------|--------|--------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     | 1.4793 | .6750  | .2130 | .0857 | .0179 |        |        | -.0558 | -.0285 | -.0023 | -.0143 | -.0384 | -.0507 | -.0531 |        |
| 20.000  |        |        | .2475 | .0959 | .0092 | -.0492 |        | -.0496 | -.0439 | -.1160 | -.1153 | -.1053 | -.0637 | -.0791 | -.0444 |
| 40.000  |        |        | .3895 | .1138 | .0550 | -.0486 |        | -.0551 |        | .0316  |        |        |        |        |        |
| 55.000  |        |        | .5071 | .2378 | .1700 | .0446  |        | .0732  |        |        |        |        |        |        |        |
| 70.000  |        |        | .5818 | .3099 | .2227 | .1296  |        | .1575  | .0739  | -.2442 | -.1653 | -.1077 | .0013  |        |        |
| 90.000  |        | .7984  | .6442 | .3807 | .2333 | .1632  |        | .2057  | -.0101 | -.2385 | -.2412 | -.1299 | -.0048 |        |        |
| 120.000 |        |        | .7185 | .5239 | .3571 | .3805  |        | .4594  | .0450  | -.1858 | -.4052 | -.1781 | -.0510 |        |        |
| 140.000 |        |        |       |       |       |        |        |        | -.0725 | -.3002 | -.1837 | -.1407 | -.0718 |        |        |
| 150.000 |        |        | .7424 | .6103 | .4502 | .5137  |        | .9294  | -.1695 |        |        |        |        |        |        |
| 151.000 |        |        |       |       |       |        |        | .6547  |        |        |        |        |        |        |        |
| 152.000 |        |        |       |       |       |        |        | .7383  |        |        |        |        |        |        |        |
| 165.000 |        |        |       |       |       |        |        |        | -.1557 | -.2771 | -.1474 | -.1254 | -.0760 |        |        |
| 169.000 |        |        |       |       |       |        |        |        | -.2943 | -.3000 | -.1086 | -.1181 | -.0770 |        |        |
| 174.000 |        |        |       |       |       |        |        |        |        |        |        |        |        |        |        |
| 180.000 | 1.4793 | 1.0107 | .7353 | .6106 | .4847 | .5595  | 1.0922 | 1.0348 | -.0239 |        |        |        |        |        |        |
| X/LB    | .5520  | .7290  | .7790 | .8210 | .8790 | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |        |

X/LB

PHI

| X/LB    | .0000  | .0156 | .0361  | .0864  | .1619  | .2056  | .2513  | .1935  | .2207 | .0739 |  |  |  |  |  |
|---------|--------|-------|--------|--------|--------|--------|--------|--------|-------|-------|--|--|--|--|--|
| 40.000  |        |       | -.0413 | -.0564 | -.0906 | -.1621 | -.1225 | .1236  |       |       |  |  |  |  |  |
| 70.000  |        | .0106 | .0026  | .2276  | .1080  | .0105  | -.1312 |        |       |       |  |  |  |  |  |
| 90.000  |        | .0585 | .0352  | .1497  | .1885  | -.0013 | -.0563 |        |       |       |  |  |  |  |  |
| 105.000 |        |       | .2766  | .2226  | -.0171 | -.0520 | -.0804 |        |       |       |  |  |  |  |  |
| 110.000 |        |       |        |        |        |        |        | -.2069 |       |       |  |  |  |  |  |
| 120.000 | .0376  | .0581 | .3010  | .1319  | .0243  | -.1134 | -.1211 | -.1939 |       |       |  |  |  |  |  |
| 135.000 |        |       | .3959  | .3929  | .0779  | .0164  | -.0192 |        |       |       |  |  |  |  |  |
| 150.000 | .0076  | .0442 | .4020  | .4113  | .1680  | .1019  | .0297  |        |       |       |  |  |  |  |  |
| 165.000 | .0010  |       | .4072  | .4172  | .1903  | -.3018 |        |        |       |       |  |  |  |  |  |
| 180.000 | -.0556 | .0264 | .4097  | .4935  |        |        |        |        |       |       |  |  |  |  |  |

ALPHA ( 1 ) = -3.950 BETA ( 3 ) = 4.276 MACH = 1.3931 Q = 600.20 P = 441.83 RN/L = 2.9112

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4870  | .5740 |
|---------|--------|-------|-------|-------|-------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | 1.4645 | .6587 | .2061 | .0644 | .0172 |        |       | -.0618 | -.0431 | -.0046 | -.0139 | -.0311 | -.0641 | -.0608 |       |
| 20.000  |        |       | .2174 | .0779 | .0004 | -.0405 |       | -.0505 | -.0363 | -.0810 | -.0734 | -.0519 | -.0729 | 1.0379 |       |
| 40.000  |        |       | .3237 | .0882 | .0309 | -.0476 |       | -.0392 |        |        |        |        |        |        |       |
| 55.000  |        |       | .4149 | .1605 | .1052 | -.0087 |       | .0402  | .0027  |        |        |        |        |        |       |
| 70.000  |        |       | .4775 | .2110 | .1378 | .0555  |       | .0963  | .0183  | -.2883 | -.2217 | -.1385 | -.0115 |        |       |
| 90.000  |        | .6492 | .5359 | .2783 | .1362 | .0732  |       | .1204  | -.1074 | -.3024 | -.2990 | -.1525 | -.0178 |        |       |
| 120.000 |        |       | .6252 | .4354 | .2668 | .2219  |       | .3456  | -.0585 | -.2538 | -.4546 | -.2363 | -.0806 |        |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XE8838)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 1 ) = -3.950 BETA ( 3 ) = 4.276

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 160.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 160.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

PHI

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 160.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

ALPHA ( 2 ) = .030 BETA ( 1 ) = -3.869 MACH = 1.3931 Q = 599.59 P = 441.36 RN/L = 2.9073

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 160.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

1.0289

TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

(XEB838)

DATE 10 FEB 76

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = .030 BETA ( 1 ) = -3.869

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 180.000 | 1.4790 | .8951  | .6044  | .5062  | .3468  | .3725  |        | .9492  |        | -.3004 | -.3363 | -.1992 | -.1653 | -.0942 |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| .000    | -.0019 | .0106  | .0085  | -.0360 | -.0997 | -.1482 | -.1853 |        | .2500  | .2571  |        |        |        |        |       |
| 40.000  | -.0076 |        | -.0123 | -.0415 | -.1159 | -.0572 | -.1654 |        | .2349  | .1822  |        |        |        |        |       |
| 70.000  | .0167  | -.0688 | -.1299 | .0446  | .0649  | -.0209 | -.1379 |        |        |        |        |        |        |        |       |
| 90.000  | .0378  | -.0211 | -.0855 | .1247  | .0234  | -.0220 | -.0841 |        |        |        |        |        |        |        |       |
| 105.000 |        | .0216  | .1837  | -.0547 | -.0547 | -.0913 | -.1249 |        |        |        |        |        |        |        |       |
| 110.000 |        |        |        |        |        |        |        | -.3278 |        |        |        |        |        |        |       |
| 120.000 | -.0196 | -.0184 | .2740  | .2210  | .0277  | -.1137 | -.1367 | -.1848 |        |        |        |        |        |        |       |
| 135.000 |        |        | .3322  | .3311  | .0341  | -.0289 | -.0190 |        |        |        |        |        |        |        |       |
| 150.000 | -.0280 | .0028  | .3188  | .3239  | .0496  | .1174  | .0464  |        |        |        |        |        |        |        |       |
| 165.000 | -.0303 | .3177  |        |        | .4011  | .2261  | -.2560 |        |        |        |        |        |        |        |       |
| 180.000 | -.0274 | .0137  | .3093  | .3050  |        |        |        |        |        |        |        |        |        |        |       |

ALPHA ( 2 ) = .036 BETA ( 2 ) = .183 MACH = 1.3931 Q = 599.59 P = 441.36 RVL = 2.9073

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |       |        |        |        |        |        |        |        |        |        |        |        |        |
| .000    | 1.4830 | .7369 | .3332 | .1677  | .0895  |        |        | -.0083 |        | -.0088 | .0099  | .0280  | .0109  | -.0145 | -.0234 |
| 20.000  |        |       | .3518 | .1773  | .0829  | .0189  |        | -.0074 |        | -.0196 | -.0166 | -.0293 | -.0028 | -.0387 | -.0187 |
| 40.000  |        |       | .4720 | .2094  | .1396  | .0421  |        | .0070  |        | -.0248 |        |        |        |        |        |
| 57.000  |        |       | .5533 | .2944  | .2600  | .0969  |        | .1007  |        | .0902  |        |        |        |        |        |
| 77.000  |        |       | .5375 | .3261  | .2430  | .1395  |        | .1673  |        | .1240  | -.2117 | -.1377 | -.1041 | -.0423 |        |
| 90.000  | .7703  |       | .6453 | .3719  | .2480  | .1599  |        | .2445  |        | .0534  | -.2105 | -.2152 | -.1448 | -.0441 |        |
| 120.000 |        |       | .6560 | .4682  | .3091  | .2916  |        | .4730  |        | .0657  | -.1966 | -.3826 | -.1652 | -.0622 |        |
| 140.000 |        |       | .6414 | .5244  | .3335  | .3583  |        | .8873  |        | -.0251 | -.3535 | -.2435 | -.1537 | -.0702 |        |
| 150.000 |        |       |       |        |        |        |        |        | .6360  | -.1930 |        |        |        |        |        |
| 161.000 |        |       |       |        |        |        |        |        | .7141  |        |        |        |        |        |        |
| 165.000 |        |       |       |        |        |        |        |        |        |        |        |        |        |        |        |
| 169.000 |        |       |       |        |        |        |        |        |        |        |        |        |        |        |        |
| 174.000 |        |       |       |        |        |        |        |        |        |        |        |        |        |        |        |
| 180.000 |        |       |       |        |        |        |        |        |        |        |        |        |        |        |        |
| X/LB    | .6520  | .7290 | .7790 | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |        |
| PHI     |        |       |       |        |        |        |        |        |        |        |        |        |        |        |        |
| .000    | 1.4830 | .8827 | .6140 | .5142  | .3690  | .3775  | 1.0268 |        |        |        |        |        |        |        |        |
| 40.000  |        |       |       |        |        |        |        |        |        |        |        |        |        |        |        |
| X/LB    | .6520  | .7290 | .7790 | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |        |
| PHI     |        |       |       |        |        |        |        |        |        |        |        |        |        |        |        |
| .000    | -.0038 | .0229 | .0134 | -.0281 | -.1301 | -.1445 | -.1882 |        |        |        |        |        |        |        |        |
| 40.000  | .0082  |       | .0782 | -.0277 | -.1046 | -.0659 | -.1605 |        |        |        |        |        |        |        |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) - 140A/B/C/R ORB FUSELAGE

(XEB838)

ALPHA ( 2 ) = .036 BETA ( 2 ) = .183

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |       |        |        |        |        |        |        |
| 70.000  | -.0019 | -.0969 | -.1226 | .0742 | .0212  | -.0540 | -.1653 |        |        |        |
| 90.000  | .0252  | -.0423 | .0231  | .0984 | -.0243 | -.0564 | -.1051 |        |        |        |
| 105.000 |        |        | .1556  | .1243 | -.1233 | -.1207 | -.1457 |        |        |        |
| 110.000 |        |        |        |       |        |        |        | -.2475 |        |        |
| 120.000 | .0108  | .0044  | .2666  | .1991 | .0013  | -.1507 | -.2173 | -.2269 |        |        |
| 135.000 |        |        | .2830  | .3373 | .0778  | -.0360 | -.0780 |        |        |        |
| 150.000 | -.0010 | .0259  | .2954  | .3523 | .1124  | .0524  | -.0285 |        |        |        |
| 165.000 | -.0076 |        | .3105  | .3366 | .1280  | -.3004 |        |        |        |        |
| 180.000 | -.0146 | .0176  | .3248  | .4208 |        |        |        |        |        |        |

ALPHA ( 2 ) = .034 BETA ( 3 ) = .4255 MACH = 1.3931 Q = 599.59 P = 441.36 RN/L = 2.9073

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660  | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|-------|-------|-------|-------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |       |       |       |       |       |        |       |        |        |        |        |        |        |
| 20.000  | 1.4713 | .7899 | .3268 | .1456 | .0968 |       |       | -.0140 |       | -.0157 | .0001  | .0223  | .0059  | -.0279 | -.0319 |
| 40.000  |        |       | .3242 | .1536 | .0715 | .0218 |       | -.0117 |       | -.0216 |        |        |        |        |        |
| 55.000  |        |       | .4016 | .1676 | .0238 | .0238 |       | .0034  |       | -.0202 | -.0037 | -.0210 | -.0064 | -.0477 | -.0288 |
| 70.000  |        |       | .4592 | .2126 | .1558 | .0440 |       | .0560  |       | .0624  |        |        |        |        |        |
| 90.000  | .6235  |       | .4887 | .2296 | .1598 | .0659 |       | .1084  |       | .0747  | -.2535 | -.1886 | -.1502 | -.0477 |        |
| 120.000 |        |       | .5262 | .2749 | .1518 | .0768 |       | .1572  |       | -.0304 | -.2684 | -.2746 | -.1707 | -.0502 |        |
| 140.000 |        |       | .5720 | .3905 | .2284 | .2155 |       | .3667  |       | -.0323 | -.2679 | -.4518 | -.1872 | -.0538 |        |
| 150.000 |        |       | .5897 | .4872 | .3082 | .3049 |       | .8223  |       | -.2455 | -.3546 | -.2410 | -.2007 | -.0831 |        |
| 162.000 |        |       |       |       |       |       |       |        | .5346 |        |        |        |        |        |        |
| 165.000 |        |       |       |       |       |       |       |        | .6374 |        |        |        |        |        |        |
| 169.000 |        |       |       |       |       |       |       |        |       | -.2143 | -.3645 | -.1851 | -.1825 | -.0930 |        |
| 174.000 |        |       |       |       |       |       |       |        |       |        |        |        |        |        |        |
| 180.000 | 1.4713 | .8609 | .6173 | .5210 | .3796 | .3681 | .9749 | .9747  |       | -.3173 | -.3382 | -.2089 | -.1693 | -.0934 |        |

X/LB

PHI

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| 40.000  | -.0161 | .0216  | .0096  | -.0306 | -.0957 | -.1415 | -.1850 |        |        |        |
| 70.000  | -.0198 |        | .0216  | -.0133 | -.0986 | -.0656 | -.1609 |        |        |        |
| 90.000  | -.0102 | -.1192 | -.0927 | .0883  | .0001  | -.0846 | -.1932 |        |        |        |
| 105.000 | .0216  | -.0602 | .0380  | .0905  | -.0583 | -.0919 | -.1363 |        |        |        |
| 110.000 |        |        | .1737  | .1316  | -.1583 | -.1648 | -.1792 |        |        |        |
| 120.000 | .0166  | .0093  | .2243  | .0574  | -.0732 | -.2161 | -.3172 | -.2752 |        |        |
| 135.000 |        |        | .2853  | .2910  | -.0015 | -.1009 | -.1424 | -.2877 |        |        |
| 150.000 | -.0074 | .0271  | .3040  | .2991  | .0841  | -.0280 | -.1082 |        |        |        |

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TABULATED PRESSURE DATA - 0A148 / AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORS FUSELAGE

(XE8838)

ALPHA ( 2 ) = .034 BETA ( 3 ) = 4.255

SECTION ( 1 ) ORBITTER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9980 1.0180 1.0460

PHI

165.000 -.0177 .3043

.2506 .0594 -.3380

180.000 -.0282 .3123 .3163

ALPHA ( 3 ) = 3.894 BETA ( 1 ) = -3.872 MACH = 1.3932 Q = 989.70 P = 441.36 RV/L = 2.9108

SECTION ( 1 ) ORBITTER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0090 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.4697 .9228 .4368 .2687 .1667

.0450 .0331 .0380 .0402 .0507 .0212 .0175

.0601

20.000 .4805 .2921 .1754 .0734

.0215 .0241 .0590 .0333 .0415 .0116 .0307

40.000 .6256 .3503 .2548 .1333 .2548

.1840 .1758

55.000 .6936 .4368 .3477 .2032

.1840 .2121 .1322 .0490 .0417 .0868

70.000 .7004 .4453 .3437 .2285

.1967 .1206 .1287 .1061 .0915 .0864

90.000 .7021 .4593 .3319 .2367

.2699 .1736 .1155 .3137 .2410 .1495

120.000 .6632 .4722 .3331 .3020

.5565 .1078 .3897 .3245 .1858 .1093

140.000 .5699 .4465 .2742 .2921

.9388 .7044 .7461

150.000 .5699 .4465 .2742 .2921

.9388 .7044 .7461

162.000 .5699 .4465 .2742 .2921

.9388 .7044 .7461

165.000 .5699 .4465 .2742 .2921

.9388 .7044 .7461

174.000 .5699 .4465 .2742 .2921

.9388 .7044 .7461

180.000 .5699 .4465 .2742 .2921

.9388 .7044 .7461

X/LB 1.4697 .7623 .4809 .4137 .2518 .2730 .9520

.9861 .9107 .9990 1.0180 1.0460

.6520 .7290 .7790 .8210 .8790 .9210 .9600

.9990 1.0180 1.0460

PHI

.000 .0382 .0472 .0663 .0286 .0320 .0808 .1152

.3488 .3554 .3488

40.000 .0575 .0623 .0623 .0279 .0538 .0143 .1069

.2652 .2652

70.000 .0487 .1519 .2000 .0878 .0225 .0745 .1607

.1607 .1607

90.000 .0256 .0895 .1681 .0542 .0607 .0934 .1378

.1378 .1378

105.000 .1037 .1037 .1135 .1135 .1030 .2004 .1725

.1725 .1725

110.000 .1979 .1979 .1522 .1522 .1017 .1611 .2143

.2143 .2143

120.000 .2296 .2296 .2317 .2317 .0208 .1269 .0864

.0864 .0864

135.000 .2267 .2267 .2330 .2330 .0531 .0486 .0243

.0243 .0243

150.000 .0029 .0029 .2775 .2775 .1729 .1729 .2600

.2600 .2600

165.000 .0398 .0398 .2704 .2704

.2704 .2704

180.000 .0330 .0330 .2704 .2704

.2704 .2704

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8838)

ALPHA ( 3 ) = 3.895 BETA ( 2 ) = .183 MACH = 1.3932 Q = 599.70 P = 441.36 RN/L = 2.9108

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

|         |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 20.000  | 1.4719 | .9189 | .4385 | .2667 | .1749 |       |       | .0464 | .0350  | .0305  | .0553  | .0587  | .0237  | .0257  |       |
| 40.000  |        |       | .4576 | .2700 | .1681 | .0841 |       | .0461 | .0239  | .0145  | .0693  | .0400  | .0481  | .0129  | .0179 |
| 55.000  |        |       | .5513 | .3034 | .2211 | .1095 |       | .0737 | .0145  | .1163  |        |        |        |        |       |
| 70.000  |        |       | .5891 | .3391 | .2702 | .1377 |       | .1169 | .1548  |        |        |        |        |        |       |
| 90.000  |        | .7319 | .5934 | .3374 | .2584 | .1461 |       | .1289 | .1106  | -.1780 | -.1056 | -.0981 | -.1073 |        |       |
| 120.000 |        |       | .6002 | .3558 | .2428 | .1494 |       | .2126 | .0844  | -.1865 | -.1738 | -.1451 | -.0914 |        |       |
| 140.000 |        |       | .5882 | .4053 | .2659 | .2388 |       | .4777 | .0022  | -.1926 | -.3651 | -.1973 | -.1031 |        |       |
| 150.000 |        |       | .5388 | .4344 | .2537 | .2735 |       | .8402 | -.2047 | -.3948 | -.2903 | -.1718 | -.0677 |        |       |
| 151.000 |        |       |       |       |       |       |       |       | .6220  |        |        |        |        |        |       |
| 162.000 |        |       |       |       |       |       |       |       | .6918  |        |        |        |        |        |       |
| 165.000 |        |       |       |       |       |       |       | .9503 |        | -.2417 | -.3615 | -.2523 | -.1871 | -.0576 |       |
| 169.000 |        |       |       |       |       |       | .9468 |       |        |        |        |        |        |        |       |
| 174.000 |        |       | .4968 | .4188 | .2744 | .2799 |       | .9369 |        | -.3837 | -.3547 | -.2114 | -.1914 | -.0561 |       |
| 180.000 | 1.4719 | .7440 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |

X/LB

PHI

| X/LB    | PHI | .0292 | .0637 | .0717 | .0375 | .0320 | .0780 | .1199 | .1199 | .3544 | .3426 | .3064 | .2822 | .2815 |
|---------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 20.000  |     |       |       | .0790 | .0392 | .0353 | .0129 | .1095 |       |       |       |       |       |       |
| 40.000  |     |       |       | .1943 | .0290 | .0499 | .1082 | .1884 |       |       |       |       |       |       |
| 70.000  |     |       |       | .1156 | .0366 | .1211 | .1211 | .1575 |       |       |       |       |       |       |
| 90.000  |     |       |       | .0856 | .0827 | .1804 | .2338 | .1958 |       |       |       |       |       |       |
| 110.000 |     |       |       | .1944 | .1298 | .0339 | .1814 | .2524 |       |       |       |       |       |       |
| 135.000 |     |       |       | .2040 | .2486 | .0310 | .0831 | .1234 |       |       |       |       |       |       |
| 150.000 |     |       |       | .2091 | .3411 | .0857 | .0004 | .0796 |       |       |       |       |       |       |
| 165.000 |     |       |       | .2137 | .3918 | .2725 | .0761 | .2828 |       |       |       |       |       |       |
| 180.000 |     |       |       | .2266 |       |       |       |       |       |       |       |       |       |       |

ALPHA ( 3 ) = 3.906 BETA ( 3 ) = 4.246 MACH = 1.3932 Q = 599.70 P = 441.36 RN/L = 2.9108

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 20.000  | 1.4584 | .9093 | .4338 | .2488 | .1806 |       |       | .0431 | .0284 | .0218 | .0423 | .0564 | .0217 | .0149 |       |
| 40.000  |        |       | .4215 | .2446 | .1504 | .0771 |       | .0344 | .0159 |       |       |       |       |       |       |
| 55.000  |        |       | .4664 | .2553 | .1723 | .0810 |       | .0537 | .0005 | .0650 | .0281 | .0401 | .0086 | .0019 |       |
| 70.000  |        |       | .4825 | .2513 | .1910 | .0743 |       | .0622 | .0650 |       |       |       |       |       |       |
| 90.000  |        | .5827 | .4851 | .2409 | .1716 | .0750 |       | .0700 | .1036 | .2182 | .1572 | .1489 | .1102 |       |       |
| 120.000 |        |       | .4988 | .2624 | .1601 | .0740 |       | .1512 | .0319 | .2386 | .2290 | .1898 | .0968 |       |       |
|         |        |       | .5090 | .3373 | .1998 | .1748 |       | .3728 | .0042 | .2714 | .4233 | .1719 | .0749 |       |       |

(XEBB38)

**ALPHA ( 3 ) = 3.906    BETA ( 3 ) = 4.246**

AMCS 11-073(OA148) -140A/B/C/R ORB FUSELAGE

## SECTION 1: ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

[illegible]

## SECTION (1) ORBITER FUSELAGE

**DEPENDENT VARIABLE CP**

[illegible]



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(XEB938)

ALPHA ( 4 ) = 7.892 BETA ( 2 ) = .162

AMEC 11-073(0A148) -140A/B/C/R ORB FUSELAGE

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

70.000 -.1379 -.2464 -.2697 -.0986 -.1486 -.1602 -.2109  
 90.000 -.0769 -.1837 -.2245 -.0151 -.1929 -.2107 -.2034  
 105.000 .0533 .0533 .0533 .0533 .0533 .0533 .0533  
 110.000 -.0664 -.0859 .0930 .0476 -.0840 -.2093 -.2754  
 120.000 .0932 .0932 .0932 .0932 .0932 .0932 .0932  
 135.000 -.0401 -.0415 .0926 .3666 .0338 -.0588 -.1178  
 150.000 -.0320 .0995 .0995 .0995 .0995 .0995 .0995  
 165.000 -.0289 -.0164 .1248 .4047 .2369 .0167 -.3103  
 180.000 .3148 .3352 .3148 .3352 .3148 .3352 .3148

ALPHA ( 4 ) = 7.830 BETA ( 3 ) = 4.245 MACH = 1.3932 Q = 599.39 P = 441.12 RN/L = 2.9102

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.4316 1.0273 .5469 .3687 .2724 .1397 .0938 .1117 .0852 .0760 .0724 .1089 .0604 .0745  
 20.000 .5280 .5280 .5280 .5280 .5280 .5280 .5280 .5280 .5280 .5280 .5280 .5280 .5280 .5280  
 40.000 .5344 .5344 .5344 .5344 .5344 .5344 .5344 .5344 .5344 .5344 .5344 .5344 .5344 .5344  
 60.000 .5023 .5023 .5023 .5023 .5023 .5023 .5023 .5023 .5023 .5023 .5023 .5023 .5023 .5023  
 70.000 .4758 .4758 .4758 .4758 .4758 .4758 .4758 .4758 .4758 .4758 .4758 .4758 .4758 .4758  
 90.000 .5429 .5429 .5429 .5429 .5429 .5429 .5429 .5429 .5429 .5429 .5429 .5429 .5429 .5429  
 120.000 .4718 .4718 .4718 .4718 .4718 .4718 .4718 .4718 .4718 .4718 .4718 .4718 .4718 .4718  
 140.000 .4430 .4430 .4430 .4430 .4430 .4430 .4430 .4430 .4430 .4430 .4430 .4430 .4430 .4430  
 150.000 .3944 .3944 .3944 .3944 .3944 .3944 .3944 .3944 .3944 .3944 .3944 .3944 .3944 .3944  
 160.000 .151.000 .151.000 .151.000 .151.000 .151.000 .151.000 .151.000 .151.000 .151.000 .151.000 .151.000 .151.000 .151.000 .151.000  
 170.000 .169.000 .169.000 .169.000 .169.000 .169.000 .169.000 .169.000 .169.000 .169.000 .169.000 .169.000 .169.000 .169.000 .169.000  
 180.000 1.4316 .5844 .3762 .3450 .1957 .1872 .7960 .8415 .8932 .3971 .4108 .2702 .2095 .0718

X/LB

PHI

.000 .0833 .1238 .1305 .1070 .0433 .0001 .0281 .4753 .4379 .2658  
 40.000 .1036 .1556 .1293 .1293 .0411 .0684 .0312 .3717 .2658  
 70.000 .1237 .2358 .2590 .0951 .1420 .1701 .2522  
 90.000 .0632 .1695 .1443 .0309 .2136 .2029 .2008  
 105.000 .0256 .0007 .2768 .3316 .2704  
 110.000 .0734 .0734 .0734 .0734 .0734 .0734 .0734  
 120.000 .0340 .0593 .0734 .0734 .0734 .0734 .0734  
 135.000 .1449 .1449 .1449 .1449 .1449 .1449 .1449  
 150.000 .0263 .0169 .1574 .2934 .0423 .1248 .1628

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB838)

ALPHA ( 4 ) = 7.830 BETA ( 3 ) = 4.245

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790 | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|--------|--------|-------|-------|-------|--------|--------|-------|--------|--------|
| PHI     |        |        |       |       |       |        |        |       |        |        |
| 165.000 | -.0336 | .1143  |       |       |       |        |        |       |        |        |
| 180.000 | -.0477 | -.0092 | .1176 | .2688 | .1827 | -.0603 | -.3381 |       |        |        |

ALPHA ( 5 ) = 11.870 BETA ( 1 ) = -3.851 MACH = 1.3941 Q = 600.12 P = 441.12 RN/L = 2.9072

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1860 | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |       |       |       |       |       |       |       |        |        |        |        |        |       |
| .000    | 1.3887 | 1.1464 | .6734 | .4867 | .3544 |       |       | .1842 |       | .1641  | .1417  | .1223  | .1436  | .1488  | .1515 |
| 20.000  |        |        | .7181 | .5103 | .3608 | .2503 |       | .2014 |       | .1542  |        |        |        |        |       |
| 40.000  |        |        | .7886 | .5505 | .4241 | .2918 |       | .2459 |       | .1570  | .1735  | .1761  | .1792  | .1443  | .1687 |
| 55.000  |        |        | .7459 | .5159 | .4076 | .2447 | .2063 |       |       | .1382  |        |        |        |        |       |
| 70.000  |        |        | .6748 | .4547 | .3363 | .2350 | .1908 | .1287 |       | .1287  | -.0727 | -.0126 | -.0192 | -.0972 |       |
| 90.000  | .7667  |        | .6176 | .4109 | .2958 | .1967 | .1823 | .2261 |       | .2261  | -.0982 | -.0345 | -.0694 | -.1353 |       |
| 120.000 |        |        | .4927 | .3078 | .1771 | .1607 | .4286 | .1848 |       | .1848  | -.1213 | -.2986 | -.4334 | -.4857 |       |
| 140.000 |        |        |       |       |       |       |       | .1099 |       | .1099  |        |        |        |        |       |
| 150.000 |        | .3495  | .2193 | .1418 | .1308 |       | .8751 |       |       | -.0739 | -.4701 | -.4277 | -.2569 | -.1597 |       |
| 162.000 |        |        |       |       |       |       |       | .6536 |       |        |        |        |        |        |       |
| 165.000 |        |        |       |       |       |       |       | .6854 |       |        |        |        |        |        |       |
| 169.000 |        |        |       |       |       |       |       |       |       |        |        |        |        |        |       |
| 174.000 |        |        |       |       |       |       |       |       |       |        |        |        |        |        |       |
| 180.000 | 1.3887 | .4826  | .2546 | .2292 | .1168 | .1202 | .6764 | .8422 |       | -.3284 | -.4321 | -.3606 | -.2183 | -.1036 |       |

X/LB

PHI

40.000

70.000

90.000

105.000

110.000

120.000

135.000

150.000

165.000

180.000

X/LB

PHI

40.000

70.000

90.000

105.000

110.000

120.000

135.000

150.000

165.000

180.000



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XE8838)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 5 ) = 11.873 BETA ( 3 ) = 4.255

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000   | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|---------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|
| PHI     | 140.000 |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 150.000 |         |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 151.000 |         |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 162.000 |         |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 165.000 |         |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 169.000 |         |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 174.000 |         |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 180.000 | 1.3825  | .4347 | .2585 | .2568 | .1271 | .1193 | .6768 | .8190 |        |        |       |       |       |       |       |
| X/LB    | .6520   | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |

PHI

|         |        |        |        |        |        |        |       |
|---------|--------|--------|--------|--------|--------|--------|-------|
| .000    | .1634  | .2085  | .2309  | .1966  | .1286  | .0820  | .0667 |
| 40.000  | .1750  | .2562  | .2172  | .1158  | .1677  | .0610  |       |
| 70.000  | -.2190 | -.3363 | -.3806 | -.2167 | -.2378 | -.2732 |       |
| 90.000  | -.1185 | -.2258 | -.2526 | -.1402 | -.3053 | -.3006 |       |
| 105.000 |        |        | -.0709 | -.0854 | -.3988 | -.4113 |       |
| 110.000 |        |        | .0113  | -.1397 | -.1710 | -.3044 |       |
| 120.000 | -.0718 | -.0959 | -.0623 | .1418  | -.1078 | -.1733 |       |
| 135.000 |        |        | -.0425 | .2852  | -.0429 | -.1433 |       |
| 150.000 | -.0388 |        | -.0469 | .2152  | -.0893 | -.3632 |       |
| 165.000 |        |        | -.0578 | .3514  |        |        |       |
| 180.000 |        |        |        |        |        |        |       |

ALPHA ( 6 ) = 15.853 BETA ( 1 ) = 4.3829 MACH = 1.3929 Q = 599.99 P = 441.82 RW/L = 2.9183

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000   | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|---------|--------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|
| PHI     | 140.000 |        |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 150.000 |         |        |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 151.000 |         |        |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 162.000 |         |        |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 165.000 |         |        |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 169.000 |         |        |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 174.000 |         |        |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 180.000 | 1.3143  | 1.2455 | .7970 | .5999 | .4653 | .3431 | .2737 |       |        |        |       |       |       |       |       |
| X/LB    | .6520   | .7290  | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |

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(XEB838)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 6 ) = 15.853 BETA ( 1 ) = -3.829

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 180.000 | 1.3143 | .3167 | .1947 | .1437 | .0530 | .0642 |       | .7289 |        | -.4385 | -.4975 | -.3032 | -.1927 | -.0579 |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |

PHI

| PHI     | .000   | .3022  | .3270  | .3054  | .2429  | .1787  | .1592  |        | .7004 | .5547 |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--|--|--|--|--|
| 40.000  | .2793  | .3683  | .3147  | .2216  | .2772  | .1019  |        |        | .5623 | .3842 |  |  |  |  |  |
| 70.000  | -.2556 | -.4418 | -.5217 | -.4658 | -.4568 | -.3967 | -.2621 |        |       |       |  |  |  |  |  |
| 90.000  | -.1431 | -.3104 | -.3748 | -.2019 | -.2964 | -.3229 | -.3318 |        |       |       |  |  |  |  |  |
| 105.000 |        | -.2938 | -.0390 | -.0307 | -.3077 | -.3806 | -.3895 |        |       |       |  |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        | -.3801 |       |       |  |  |  |  |  |
| 120.000 | -.2237 | -.1922 | -.1094 | .0982  | -.1983 | -.2807 | -.2932 | -.3483 |       |       |  |  |  |  |  |
| 135.000 |        | -.0330 | .0409  | -.2013 | -.1824 | -.2172 |        |        |       |       |  |  |  |  |  |
| 150.000 | -.2849 | -.3184 | -.1666 | .1475  | -.3729 | -.2734 | -.3079 |        |       |       |  |  |  |  |  |
| 165.000 | -.1193 | -.2031 |        | .1672  | -.0582 | -.3549 |        |        |       |       |  |  |  |  |  |
| 180.000 | -.0804 | -.0989 | -.1024 | .2448  |        |        |        |        |       |       |  |  |  |  |  |

ALPHA ( 6 ) = 15.866 BETA ( 2 ) = .185 MACH = 1.3929 Q = 599.99 P = 441.82 RN/L = 2.9183

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|-------|
| PHI     |        |        |       |       |       |       |       |       |        |        |        |        |        |       |       |
| 180.000 | 1.3214 | 1.2516 | .8021 | .6013 | .4691 | .3250 |       | .2742 |        | .2385  | .2120  | .1936  | .2161  | .2284 | .2307 |
| 40.000  |        |        | .8037 | .5959 | .4415 | .3161 |       | .2620 |        | .2217  | .1587  | .1722  | .2034  | .2029 | .2259 |
| 70.000  |        |        | .7657 | .5650 | .4396 | .3124 |       | .2431 |        | .1558  | .0442  |        |        |       |       |
| 90.000  |        |        | .6287 | .4129 | .3066 | .1234 |       | .0876 |        | .0494  |        |        |        |       |       |
| 105.000 |        |        | .5306 | .3283 | .2285 | .1444 |       | .1013 |        | .1424  |        |        |        |       |       |
| 120.000 |        | .5698  | .4707 | .2731 | .1844 | .0926 |       | .0937 |        | .1103  |        |        |        |       |       |
| 140.000 |        |        | .3511 | .1714 | .0620 | .0572 |       | .3181 |        | .0303  |        |        |        |       |       |
| 150.000 |        |        | .2273 | .1356 | .0585 | .0655 |       | .6320 |        | .5500  |        |        |        |       |       |
| 162.000 |        |        |       |       |       |       |       | .6037 |        |        |        |        |        |       |       |
| 165.000 |        |        |       |       |       |       |       |       | -.3510 | -.4532 | -.3353 | -.1846 | -.0647 |       |       |
| 169.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |       |       |
| 174.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |       |       |
| 180.000 | 1.3214 | .2844  | .1606 | .1606 | .0625 | .0709 | .6423 | .7361 |        |        |        |        |        |       |       |
| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |       |       |

PHI

| PHI    | .000  | .3512 | .3147 | .2466 | .1707 | .1801 |  | .7014 | .5518 |  |  |  |  |  |  |
|--------|-------|-------|-------|-------|-------|-------|--|-------|-------|--|--|--|--|--|--|
| 40.000 | .2892 | .3684 | .3403 | .2272 | .2721 | .1149 |  | .9570 | .3839 |  |  |  |  |  |  |

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(XE8838)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 6 ) = 15.866 BETA ( 2 ) = .185

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0480 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| 70.000  | -.3458 | -.4879 | -.5474 | -.4619 | -.5029 | -.4432 | -.2895 |        |        |        |
| 90.000  | -.2118 | -.3283 | -.4024 | -.2547 | -.3751 | -.3751 | -.3184 |        |        |        |
| 105.000 |        |        | -.2867 | -.0846 | -.4107 | -.4543 | -.4321 |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.4189 |        |        |
| 120.000 | -.1177 | -.1612 | -.0864 | -.0205 | -.1934 | -.2587 | -.3312 | -.3927 |        |        |
| 135.000 |        |        | .0067  | .0026  | -.1136 | -.1793 | -.2352 |        |        |        |
| 150.000 | -.1581 | -.1748 | -.1879 | .2643  | -.2797 | -.2329 | -.2843 |        |        |        |
| 165.000 | -.0798 |        | -.1078 |        | .2480  | -.0722 | -.3621 |        |        |        |
| 180.000 | -.0737 | -.0505 | -.0714 | .2802  |        |        |        |        |        |        |

ALPHA ( 6 ) = 15.858 BETA ( 3 ) = 4.285 MACH = 1.3329 Q = 599.99 P = 441.82 RV/L = 2.9183

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1650  | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|--------|-------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |       |       |       |       |       |        |       |        |        |        |        |        |       |
| 70.000  | 1.3159 | 1.2402 | .7920 | .5962 | .4627 |       |       | .2702  |       | .2342  | .2073  | .1859  | .2163  | .2232  | .2305 |
| 20.000  |        |        | .7519 | .5526 | .4073 | .2966 |       | .2327  |       | .1981  |        |        |        |        |       |
| 40.000  |        |        | .6573 | .4825 | .3624 | .2401 |       | .1651  |       | .0819  | .0673  | .1205  | .1696  | .1712  | .2017 |
| 55.000  |        |        | .4960 | .3023 | .1980 | .0220 |       | -.0060 |       | -.0416 |        |        |        |        |       |
| 70.000  |        |        | .4110 | .2273 | .1424 | .0685 |       | .0279  |       | -.0088 | -.1443 | -.1296 | -.1525 | -.2865 |       |
| 90.000  | .4372  |        | .3849 | .1881 | .1108 | .0265 |       | .0366  |       | .1006  | -.1738 | -.1348 | -.1737 | -.2478 |       |
| 120.000 |        |        | .3051 | .1301 | .0423 | .0371 |       | .2942  |       | .0576  | -.2284 | -.3684 | -.4684 | -.2059 |       |
| 140.000 |        |        |       |       |       |       |       |        |       | -.0489 |        |        |        |        |       |
| 150.000 |        |        | .2082 | .1358 | .0515 | .0538 |       | .5969  | .4673 | -.2801 | -.4917 | -.3872 | -.1841 | -.0751 |       |
| 165.000 |        |        |       |       |       |       |       |        | .5323 |        |        |        |        |        |       |
| 174.000 |        |        |       |       |       |       |       | .7030  |       |        |        |        |        |        |       |
| 180.000 |        |        |       |       |       |       |       |        |       |        |        |        |        |        |       |

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0480 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| 70.000  | .2630  | .3114  | .3432  | .3050  | .2340  | .1669  | .1548  |        | .7010  | .5583  |
| 40.000  | .2588  |        | .3625  | .3163  | .2189  | .2695  | .1292  |        | .5450  | .3914  |
| 70.000  | -.4033 | -.4543 | -.5010 | -.4324 | -.4692 | -.3549 | -.2697 |        |        |        |
| 90.000  | -.2185 | -.3512 | -.4023 | -.2701 | -.4025 | -.3803 | -.3392 |        |        |        |
| 105.000 |        |        | -.2454 | -.1758 | -.5089 | -.5300 | -.4834 |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.3772 |        |        |
| 120.000 | -.0996 | -.1348 | -.0423 | -.1902 | -.1774 | -.2819 | -.3950 | -.4029 |        |        |
| 135.000 |        | -.1784 | -.0557 | -.1800 | -.2556 | -.2905 |        |        |        |        |
| 150.000 | -.0770 | -.0845 | -.1135 | .2347  | -.0273 | -.1342 | -.2143 |        |        |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XE8838)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 6 ) = 15.858 BETA ( 3 ) = 4.285

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

|         |        |        |        |       |       |        |        |       |        |        |
|---------|--------|--------|--------|-------|-------|--------|--------|-------|--------|--------|
| X/LC    | .6520  | .7290  | .7790  | .8210 | .8790 | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
| PHI     |        |        |        |       |       |        |        |       |        |        |
| 165.000 | -.0562 |        |        |       |       |        |        |       |        |        |
| 180.000 | -.0757 | -.1040 | -.1028 | .2579 | .2806 | -.0748 | -.3659 |       |        |        |

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TABULATED PRESSURE DATA - 0A148 ( AYES 11-073-1 )

302 304

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

( 2 0 7 5 ) ( 6 5 8 8 3 2 )

## REFERENCE DATA

|       |   |           |         |      |   |           |        |
|-------|---|-----------|---------|------|---|-----------|--------|
| SPRF  | = | 2690.0000 | 59. FT. | XPRP | = | 1076.6800 | IN. X0 |
| LRF   | = | 474.8000  | IN.     | YPRP | = | .0000     | IN. Y0 |
| BREF  | = | 936.0680  | IN.     | ZPRP | = | 375.0000  | IN. Z0 |
| SCALE | = | .0300     |         |      |   |           |        |

### PARAMETRIC DATA

|          |        |          |        |
|----------|--------|----------|--------|
| RUDDER = | 10.000 | SPORK =  | 85.000 |
| BOFLAP = | 16.300 | L-ELVN = | 10.000 |
| R-ELVN = | 10.000 | MACH =   | 1.250  |

ALPHA ( 1 ) = -3.991    BETA ( 1 ) = -3.647    YACH = 1.2464    Q = 599.79    P = 551.57    RWZ = 3.0148

## SECTION : 1102BITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700  | .1120  | .1590  | .1650  | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|--------|-------|-------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |       |       |        |        |        |        |       |        |        |        |        |        |        |
| .000    | 1.4031 | .6264  | .1865 | .0657 | .0052  |        |        | -.0141 |       | -.0087 | -.0177 | -.0531 | -.0686 | -.1003 | -.0616 |
| 20.000  |        |        | .2234 | .0732 | -.0151 | -.0645 |        | -.0380 |       | -.0678 |        |        |        |        |        |
| 40.000  |        |        | .4104 | .1105 | .0373  | -.0566 |        | -.1024 |       | -.2011 | -.2037 | -.1520 | -.0937 | -.1251 | -.0798 |
| 55.000  |        |        | .5684 | .2998 | .0225  | .1226  |        | .0853  |       | .0195  |        |        |        |        |        |
| 70.000  |        |        | .6646 | .4089 | .3217  | .2682  |        | .1903  |       | .0733  | -.2784 | -.1269 | -.0745 | .0192  |        |
| 90.000  | .9219  |        | .7356 | .4864 | .3697  | .3258  |        | .2399  |       | .0121  | -.2470 | -.2394 | -.0951 | .0134  |        |
| 120.000 |        |        | .8015 | .6128 | .4824  | .5282  |        | .4949  |       | .0738  | -.1822 | -.4177 | -.1331 | -.0261 |        |
| 140.000 |        |        |       |       |        |        |        |        |       | .0445  |        |        |        |        |        |
| 150.000 |        |        | .7928 | .6456 | .5374  | .6091  |        | .9229  |       | -.1997 | -.3945 | -.2307 | -.1277 | -.0745 |        |
| 151.000 |        |        |       |       |        |        |        |        | .6507 |        |        |        |        |        |        |
| 162.000 |        |        |       |       |        |        |        |        | .7095 |        |        |        |        |        |        |
| 165.000 |        |        |       |       |        |        |        |        |       | -.2665 | -.2943 | -.2285 | -.1435 | -.0824 |        |
| 169.000 |        |        |       |       |        |        |        | .9789  |       |        |        |        |        |        |        |
| 174.000 |        |        |       |       |        |        | 1.0499 |        |       |        |        |        |        |        |        |
| 180.000 | 1.4031 | 1.0061 | .7320 | .6137 | .5235  | .6056  |        | .9111  |       | -.3744 | -.3694 | -.1808 | -.1664 | -.0937 |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8839)

ALPHA ( 1 ) = -3.979 BETA ( 2 ) = .190 MACH = 1.2464 Q = 599.79 P = 551.57 PN/L = 3.0148

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000   | 1.4076 | .6270 | .1982 | .0539  | .0253  |        | -.0092 | .0006  | -.0088 | -.0553 | -.0757 | -.0929 | -.0564 |       |
| 20.000  |        |        | .2159 | .0578 | -.0014 | -.0308 |        | -.0248 | -.0379 | -.1496 | -.1222 | -.0882 | -.0935 | -.0572 |       |
| 40.000  |        |        | .3559 | .0948 | .0274  | -.0253 |        | -.0574 | -.0230 | -.0230 |        |        |        |        |       |
| 55.000  |        |        | .4747 | .2229 | .1600  | .0723  |        | .0622  | .0104  | -.3375 | -.2088 | -.1170 | -.0016 |        |       |
| 70.000  |        |        | .5558 | .3024 | .2298  | .1829  |        | .1323  | -.0881 | -.3243 | -.3197 | -.1244 | -.0050 |        |       |
| 90.000  |        | .7801  | .6256 | .3747 | .2709  | .2281  |        | .1650  | -.0448 | -.2743 | -.4954 | -.1920 | -.0408 |        |       |
| 120.000 |        |        | .7089 | .5196 | .3837  | .4476  |        | .3909  | -.1610 | -.3659 | -.2473 | -.1624 | -.0507 |        |       |
| 140.000 |        |        | .7451 | .6142 | .4986  | .5719  |        | .8517  | .5644  |        |        |        |        |        |       |
| 150.000 |        |        |       |       |        |        |        |        | .6423  |        |        |        |        |        |       |
| 162.000 |        |        |       |       |        |        |        |        |        | -.2727 | -.3486 | -.1717 | -.1702 | -.0547 |       |
| 169.000 |        |        |       |       |        |        |        | .9500  |        | -.3446 | -.4065 | -.1518 | -.1648 | -.0690 |       |
| 174.000 | 1.4076 | .9949  | .7434 | .6225 | .5364  | .6147  | 1.0422 | .9411  |        |        |        |        |        |        |       |
| 190.000 | .6520  | .7230  | .7790 | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |

X/LB

PHI

|         |        |        |        |        |        |        |        |
|---------|--------|--------|--------|--------|--------|--------|--------|
| 40.000  | -.0410 | -.0236 | -.0486 | -.1162 | -.1970 | -.2503 | -.2748 |
| 70.000  | -.0439 | -.0552 | -.1096 | -.1930 | -.1598 | -.2532 |        |
| 90.000  | .0596  | .1159  | .2996  | .1064  | -.0358 | -.2182 |        |
| 105.000 | .0916  | .0402  | .2264  | .2667  | .0512  | -.1067 |        |
| 110.000 |        |        | .3257  | .2408  | -.0190 | -.1285 |        |
| 120.000 | .0725  | .1083  | .3667  | .1417  | -.0551 | -.1546 |        |
| 135.000 |        |        | .4517  | .4553  | .0133  | -.0227 |        |
| 150.000 | .0433  | .1305  | .4767  | .4707  | .1159  | -.0439 |        |
| 165.000 | .0322  |        | .4620  | .3521  | .1168  | -.3625 |        |
| 180.000 | .0278  | .1356  | .4854  | .5727  |        |        |        |

-3062  
-.2051

ALPHA ( 1 ) = -3.988 BETA ( 3 ) = 4.277 MACH = 1.2464 Q = 599.79 P = 551.57 PN/L = 3.0148

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|--------|-------|-------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | 1.3943 | .6181 | .1985 | .0444  | .0279  |       | -.0345 | -.0061 | -.0142 | -.0510 | -.0579 | -.1006 | -.0524 |       |
| 20.000  |       |        | .1992 | .0496 | -.0025 | .0424  |       | -.0130 | -.0201 | -.0845 | -.1039 | -.0775 | -.0870 | -.0388 |       |
| 40.000  |       |        | .2939 | .0500 | .0159  | -.0325 |       | -.0258 | -.0481 | -.0845 |        |        |        |        |       |
| 55.000  |       |        | .3910 | .1432 | .0826  | .0207  |       | .0230  | -.0472 | -.3851 | -.2452 | -.1377 | -.0167 |        |       |
| 70.000  |       |        | .4556 | .1911 | .1293  | .0904  |       | .0730  | -.0481 | -.3856 | -.3579 | -.1273 | -.0167 |        |       |
| 90.000  |       | .6365  | .5172 | .2586 | .1817  | .1260  |       | .0848  | -.1843 | -.3443 | -.5511 | -.2584 | -.0510 |        |       |
| 120.000 |       |        | .6146 | .4211 | .2737  | .3395  |       | .2787  | -.1564 |        |        |        |        |        |       |

X/LB

PHI



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## TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XE8839)

ALPHA ( 2 ) = .059 BETA ( 1 ) = -3.868 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |       |        |        |        |        |        |       |
| 180.000 | 1.4136 | .8779 | .6095 | .4986 | .3981 | .5124 |       | .8676 |       | -.4234 | -.4276 | -.2419 | -.2065 | -.0767 |       |

| X/LB    | .6520 | .7290 | .7790 | .8210  | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|-------|-------|-------|--------|--------|--------|--------|-------|--------|--------|
| PHI     |       |       |       |        |        |        |        |       |        |        |
| 180.000 | .0199 | .0182 | .0104 | -.0475 | -.1177 | -.1735 | -.1691 |       | .2850  | .2625  |

| X/LB    | .0000  | .0160 | .0109 | -.1714 | -.0382 | -.0163 | .1469 | .1912 | -.0205 | -.1199 | -.1621 |
|---------|--------|-------|-------|--------|--------|--------|-------|-------|--------|--------|--------|
| PHI     |        |       |       |        |        |        |       |       |        |        |        |
| 180.000 | 1.4136 | .8779 | .6095 | .4986  | .3981  | .5124  |       | .8676 |        | -.4234 | -.4276 |

| X/LB    | .0000  | .0125 | .3319 | .2228 | -.0470 | -.1208 | -.1263 | -.2447 |
|---------|--------|-------|-------|-------|--------|--------|--------|--------|
| PHI     |        |       |       |       |        |        |        |        |
| 180.000 | 1.4136 | .8779 | .6095 | .4986 | .3981  | .5124  |        | .8676  |

| X/LB    | .0000  | .0109 | .0465 | .3778 | .3697 | .0526 | .0673 | -.0080 |
|---------|--------|-------|-------|-------|-------|-------|-------|--------|
| PHI     |        |       |       |       |       |       |       |        |
| 180.000 | 1.4136 | .8779 | .6095 | .4986 | .3981 | .5124 |       | .8676  |

ALPHA ( 2 ) = .062 BETA ( 2 ) = .177 MACH = 1.2468 Q = 599.66 P = 551.10 RN/L = 3.0101

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |       |       |        |        |        |        |       |
| 180.000 | 1.4168 | .7597 | .3064 | .1497 | .1064 | .0228 | .0853 | .0191 | .0399 | .0328 | -.0005 | -.0269 | -.0547 | -.0534 |       |

| X/LB    | .0000  | .0160 | .0109 | -.1714 | -.0382 | -.0163 | .1469 | .1912 | -.0205 | -.1199 | -.1621 |
|---------|--------|-------|-------|--------|--------|--------|-------|-------|--------|--------|--------|
| PHI     |        |       |       |        |        |        |       |       |        |        |        |
| 180.000 | 1.4168 | .7597 | .3064 | .1497  | .1064  | .0228  | .0853 | .0191 | .0399  | .0328  | -.0005 |

| X/LB    | .0000  | .0125 | .3319 | .2228 | -.0470 | -.1208 | -.1263 | -.2447 |
|---------|--------|-------|-------|-------|--------|--------|--------|--------|
| PHI     |        |       |       |       |        |        |        |        |
| 180.000 | 1.4168 | .7597 | .3064 | .1497 | .1064  | .0228  | .0853  | .0191  |

| X/LB    | .0000  | .0109 | .0465 | .3778 | .3697 | .0526 | .0673 | -.0080 |
|---------|--------|-------|-------|-------|-------|-------|-------|--------|
| PHI     |        |       |       |       |       |       |       |        |
| 180.000 | 1.4168 | .7597 | .3064 | .1497 | .1064 | .0228 | .0853 | .0191  |

| X/LB    | .0000  | .0160 | .0109 | -.1714 | -.0382 | -.0163 | .1469 | .1912 | -.0205 | -.1199 | -.1621 |
|---------|--------|-------|-------|--------|--------|--------|-------|-------|--------|--------|--------|
| PHI     |        |       |       |        |        |        |       |       |        |        |        |
| 180.000 | 1.4168 | .7597 | .3064 | .1497  | .1064  | .0228  | .0853 | .0191 | .0399  | .0328  | -.0005 |

| X/LB    | .0000  | .0125 | .3319 | .2228 | -.0470 | -.1208 | -.1263 | -.2447 |
|---------|--------|-------|-------|-------|--------|--------|--------|--------|
| PHI     |        |       |       |       |        |        |        |        |
| 180.000 | 1.4168 | .7597 | .3064 | .1497 | .1064  | .0228  | .0853  | .0191  |

| X/LB    | .0000  | .0109 | .0465 | .3778 | .3697 | .0526 | .0673 | -.0080 |
|---------|--------|-------|-------|-------|-------|-------|-------|--------|
| PHI     |        |       |       |       |       |       |       |        |
| 180.000 | 1.4168 | .7597 | .3064 | .1497 | .1064 | .0228 | .0853 | .0191  |

| X/LB    | .0000  | .0160 | .0109 | -.1714 | -.0382 | -.0163 | .1469 | .1912 | -.0205 | -.1199 | -.1621 |
|---------|--------|-------|-------|--------|--------|--------|-------|-------|--------|--------|--------|
| PHI     |        |       |       |        |        |        |       |       |        |        |        |
| 180.000 | 1.4168 | .7597 | .3064 | .1497  | .1064  | .0228  | .0853 | .0191 | .0399  | .0328  | -.0005 |

| X/LB    | .0000  | .0125 | .3319 | .2228 | -.0470 | -.1208 | -.1263 | -.2447 |
|---------|--------|-------|-------|-------|--------|--------|--------|--------|
| PHI     |        |       |       |       |        |        |        |        |
| 180.000 | 1.4168 | .7597 | .3064 | .1497 | .1064  | .0228  | .0853  | .0191  |

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB839)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = .062 BETA ( 2 ) = .177

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |       |        |        |        |        |        |        |
| 70.000  | -.0027 | -.1108 | -.1198 | .1715 | .0253  | -.0890 | -.2505 |        |        |        |
| 90.000  | .0229  | -.0454 | .0785  | .1296 | -.0189 | -.0877 | -.1556 |        |        |        |
| 105.000 |        |        | .2070  | .1258 | -.0916 | -.1591 | -.1909 |        |        |        |
| 110.000 |        |        |        |       |        |        |        | -.3360 |        |        |
| 120.000 | .0336  | .0315  | .2949  | .1757 | -.0789 | -.1827 | -.2193 | -.2875 |        |        |
| 135.000 |        |        | .3231  | .3783 | .0049  | -.0921 | -.1243 |        |        |        |
| 150.000 | .0288  | .0779  | .3450  | .3924 | .0660  | -.0153 | -.0969 |        |        |        |
| 165.000 | .0229  |        | .3634  |       | .2926  | .0577  | -.3532 |        |        |        |
| 180.000 | .0182  | .0811  | .3771  | .4761 |        |        |        |        |        |        |

ALPHA ( 2 ) = .021

BETA ( 3 ) = .4254

MACH = 1.2468

Q = 599.66

P = 591.10

RN/L = 3.0101

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |       |        |        |        |        |        |        |
| 20.000  |        |        | .3016  | .1568  | .1112  |        |        | .0006  |       | .0200  | .0250  | -.0025 | -.0248 | -.0616 | -.0613 |
| 40.000  |        |        | .2973  | .1450  | .0789  | -.0047 |        | .0076  |       | .0129  |        |        |        |        |        |
| 55.000  |        |        | .3781  | .1572  | .0992  | .0149  |        | .0513  |       | -.0116 | -.0154 | -.0460 | -.0325 | -.0767 | -.0327 |
| 70.000  |        |        | .4376  | .1971  | .1426  | .0527  |        | .0938  |       | .0198  |        |        |        |        |        |
| 90.000  |        |        | .4590  | .2181  | .1426  | .0886  |        | .1192  |       | .0146  | -.3504 | -.2263 | -.1723 | -.0460 |        |
| 120.000 | .6126  |        | .5087  | .2582  | .1405  | .1171  |        | .1362  |       | -.1021 | -.3606 | -.3269 | -.1666 | -.0438 |        |
| 140.000 |        |        | .5611  | .3732  | .2174  | .3196  |        | .3108  |       | -.1284 | -.3571 | -.5308 | -.1685 | -.0506 |        |
| 150.000 |        |        | .5892  | .4718  | .3290  | .4382  |        | .7459  |       | -.3096 | -.4353 | -.2627 | -.2266 | -.0629 |        |
| 162.000 |        |        |        |        |        |        |        |        | .4484 |        |        |        |        |        |        |
| 165.000 |        |        |        |        |        |        |        |        | .5395 |        |        |        |        |        |        |
| 169.000 |        |        |        |        |        |        |        | .8698  |       | -.3332 | -.4709 | -.2251 | -.2223 | -.0657 |        |
| 174.000 |        |        |        |        |        |        | .9432  |        |       | -.4350 | -.4147 | -.2377 | -.2023 | -.0780 |        |
| 180.000 | 1.4068 | .8492  | .6206  | .5077  | .3970  | .5088  |        | .8891  |       |        |        |        |        |        |        |
| PHI     |        |        |        |        |        |        |        |        |       |        |        |        |        |        |        |
| 20.000  |        |        | .0126  | -.0443 | -.1204 | -.1733 | -.1780 |        |       |        |        |        |        |        |        |
| 40.000  | .0034  | .0263  | .0237  | -.0268 | -.1242 | -.0845 | -.2019 |        |       |        |        |        |        |        |        |
| 55.000  | .0296  |        | -.0585 | .1636  | -.0023 | -.1208 | -.2797 |        |       |        |        |        |        |        |        |
| 70.000  | -.0086 | -.1145 | .0812  | .1280  | -.0681 | -.1313 | -.1866 |        |       |        |        |        |        |        |        |
| 90.000  | .0246  | -.0506 | .2029  | .1144  | -.1451 | -.2009 | -.2312 |        |       |        |        |        |        |        |        |
| 120.000 |        |        |        |        |        |        |        |        |       |        |        |        |        |        |        |
| 140.000 | .0375  | .0411  | .2471  | .0229  | -.1681 | -.2859 | -.3212 | -.3647 |       |        |        |        |        |        |        |
| 150.000 |        |        | .3237  | .3235  | -.0732 | -.1557 | -.2597 | -.3430 |       |        |        |        |        |        |        |
| 162.000 | .0180  | .0322  | .3472  | .3474  | .0235  | -.3393 | -.1818 |        |       |        |        |        |        |        |        |

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TABULATED PRESSURE DATA - CA148 ( AMES 11-073-1 )

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AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

(XEBB39)

ALPHA ( 2 ) = .021 BETA ( 3 ) = 4.254

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|--------|-------|-------|-------|-------|--------|--------|-------|--------|--------|
| PHI     |        |       |       |       |       |        |        |       |        |        |
| 165.000 | .0079  | .3486 |       |       | .2165 | -.0093 | -.3810 |       |        |        |
| 180.000 | -.0034 | .1011 | .3590 | .3807 |       |        |        |       |        |        |

ALPHA ( 3 ) = 3.934 BETA ( 1 ) = -3.873 MACH = 1.2469 Q = 599.77 P = 551.10 RN/L = 3.0099

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| .000    | 1.4024 | .8860 | .4152 | .2756 | .1684 |       |       | .0578 | .0498  | .0633  | .0402  | .0305  | -.0148 | -.0172 |       |
| 20.000  |        | .4615 | .2909 | .1597 | .0830 |       |       | .0682 | .0340  |        |        |        |        |        |       |
| 40.000  |        | .6074 | .3480 | .2223 | .1355 |       |       | .1113 | .0376  | .0284  | .0100  | .0482  | -.0167 | .0005  |       |
| 55.000  |        |       | .6789 | .4401 | .3306 | .2262 |       | .2189 | .1507  |        |        |        |        |        |       |
| 70.000  |        |       | .6889 | .4495 | .3273 | .2535 |       | .2535 | .1691  | -.2212 | -.0764 | -.0748 | -.1076 |        |       |
| 90.000  |        | .8624 | .6915 | .4611 | .3268 | .2866 |       | .2946 | .1219  | -.2158 | -.1369 | -.1321 | -.1006 |        |       |
| 120.000 |        |       | .6551 | .4672 | .3200 | .3738 |       | .5071 | .0973  | -.1969 | -.4057 | -.2749 | -.1721 |        |       |
| 140.000 |        |       |       |       |       |       |       |       | .0258  |        |        |        |        |        |       |
| 150.000 |        | .5703 | .4292 | .2706 | .4123 |       |       | .8791 | .6156  | -.2368 | -.5077 | -.3934 | -.1949 | -.1038 |       |
| 151.000 |        |       |       |       |       |       |       |       | .6489  |        |        |        |        |        |       |
| 162.000 |        |       |       |       |       |       |       |       |        | -.3714 | -.4654 | -.3564 | -.2072 | -.0809 |       |
| 165.000 |        |       |       |       |       |       | .9534 | .9102 |        |        |        |        |        |        |       |
| 169.000 |        | .7446 | .4877 | .4033 | .2721 | .4111 |       | .8281 |        | -.4720 | -.4720 | -.2896 | -.2280 | -.0644 |       |
| 174.000 | 1.4024 |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 180.000 | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |

| X/LB    | .0414  | .0716  | .0890  | .0362  | -.0359 | -.0950 | -.0803 |
|---------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |
| 40.000  | .0534  | .0756  | .0386  | -.0529 | -.0317 | -.1487 |        |
| 70.000  | -.0552 | -.1881 | -.0176 | -.0055 | -.1010 | -.2498 |        |
| 90.000  | -.0261 | -.1361 | -.1880 | -.0525 | -.1130 | -.1847 |        |
| 105.000 |        | .0089  | .1164  | -.1412 | -.1791 | -.2290 |        |
| 110.000 |        |        |        |        |        |        | -.3458 |
| 120.000 | -.0794 | -.0957 | .2309  | .1513  | -.0884 | -.2219 | -.2877 |
| 135.000 |        | .2613  | .2607  | -.0807 | -.1263 | -.1309 |        |
| 150.000 | -.0160 | .0577  | .2652  | .2681  | -.0402 | -.0884 |        |
| 165.000 | -.0080 | .2719  |        | .2654  | .1185  | -.3307 |        |
| 180.000 | -.0034 | .1048  | .2612  | .3122  |        |        |        |

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TABULATED PRESSURE DATA - OA148 ( AMES 11-073-1 )

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AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

(XEB39)

|               |       |              |      |      |   |        |   |   |        |   |   |        |      |   |        |
|---------------|-------|--------------|------|------|---|--------|---|---|--------|---|---|--------|------|---|--------|
| ALPHA ( 3 ) = | 3.935 | BETA ( 2 ) = | .189 | MACH | = | 1.2469 | Q | = | 599.77 | P | = | 551.10 | RN/L | = | 3.0099 |
|---------------|-------|--------------|------|------|---|--------|---|---|--------|---|---|--------|------|---|--------|

## SECTION 11 ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| .000    | 1.4070 | .8873 | .4191 | .2748 | .1839 | .0838 |       | .0584 |       | .0644  | .0705  | .0497  | .0245  | -.0069 | -.0111 |
| 20.000  |        |       | .4385 | .2708 | .1603 | .0838 |       | .0688 |       | .0512  |        |        |        |        |        |
| 40.000  |        |       | .5305 | .3019 | .2037 | .1010 |       | .1098 |       | .0526  | .0382  | .0108  | .0254  | -.0222 | -.0094 |
| 55.000  |        |       | .5714 | .3437 | .2488 | .1428 |       | .1800 |       | .1010  |        |        |        |        |        |
| 70.000  |        |       | .5766 | .3463 | .2389 | .1637 |       | .1975 |       | .1116  | -.2662 | -.1528 | -.1341 | -.1103 |        |
| 90.000  | .7235  |       | .5882 | .3590 | .2243 | .1840 |       | .2356 |       | .0424  | -.2761 | -.2104 | -.1870 | -.0984 |        |
| 120.000 |        |       | .5799 | .3987 | .2427 | .3224 |       | .4348 |       | .0006  | -.2688 | -.4637 | -.2154 | -.1053 |        |
| 140.000 |        |       |       |       |       |       |       |       |       | -.0884 |        |        |        |        |        |
| 150.000 |        |       | .5305 | .4232 | .2479 | .4033 |       | .7911 |       | -.3295 | -.5132 | -.3712 | -.1863 | -.0592 |        |
| 151.000 |        |       |       |       |       |       |       |       | .5382 |        |        |        |        |        |        |
| 162.000 |        |       |       |       |       |       |       |       | .5954 |        |        |        |        |        |        |
| 165.000 |        |       |       |       |       |       |       |       |       | -.3703 | -.4412 | -.2930 | -.2130 | -.0479 |        |
| 169.000 |        |       |       |       |       |       |       | .8783 |       |        |        |        |        |        |        |
| 174.000 |        |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| 180.000 | 1.4070 | .7376 | .5079 | .4100 | .2863 | .4249 | .9377 | .8637 |       | -.5137 | -.5144 | -.2666 | -.2248 | -.0469 |        |

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| PHI     |        |        |        |       |        |        |        |  |  |
|---------|--------|--------|--------|-------|--------|--------|--------|--|--|
| .000    | .0333  | .0875  | .1000  | .0387 | -.0352 | -.0950 | -.0819 |  |  |
| 40.000  | .0582  |        | .0996  | .0526 | -.0506 | .0137  | -.1432 |  |  |
| 70.000  | -.0682 | -.1831 | -.2446 | .0078 | -.0602 | -.1395 | -.2740 |  |  |
| 90.000  | -.0259 | -.1281 | -.0601 | .0330 | -.1019 | -.1491 | -.2026 |  |  |
| 105.000 |        |        | .1198  | .0661 | -.2014 | -.2137 | -.2458 |  |  |
| 110.000 |        |        |        |       |        |        |        |  |  |
| 120.000 | -.0152 | -.0303 | .2178  | .1008 | -.1097 | -.2561 | -.2575 |  |  |
| 135.000 |        |        | .2362  | .2937 | -.0387 | -.1456 | -.1932 |  |  |
| 150.000 | .0121  | .0333  | .2443  | .4133 | .0262  | -.0691 | -.1503 |  |  |
| 165.000 | .0144  |        | .2622  |       | .2302  | .0058  | -.3592 |  |  |
| 180.000 | .0070  | .0360  | .2774  | .4478 |        |        |        |  |  |

|               |       |              |       |      |   |        |   |   |        |   |   |        |      |   |        |
|---------------|-------|--------------|-------|------|---|--------|---|---|--------|---|---|--------|------|---|--------|
| ALPHA ( 3 ) = | 3.939 | BETA ( 3 ) = | 4.242 | MACH | = | 1.2469 | Q | = | 599.77 | P | = | 551.10 | RN/L | = | 3.0099 |
|---------------|-------|--------------|-------|------|---|--------|---|---|--------|---|---|--------|------|---|--------|

## SECTION ( ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0050 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| .000    | 1.3540 | .8774 | .4162 | .2853 | .1860 | .0524 |       | .0439 |       | .0498  | .0657  | .0935  | .0272  | -.0113 | -.0188 |
| 20.000  |        |       | .4055 | .2596 | .1473 |       |       | .0378 |       | .0397  |        |        |        |        |        |
| 40.000  |        |       | .4535 | .2577 | .1735 |       |       | .0701 |       | .0420  | .0456  | .0104  | .0095  | -.0422 | -.0306 |
| 60.000  |        |       | .4843 | .2516 | .1801 | .0635 |       | .1357 |       | .0687  |        |        |        |        |        |
| 70.000  |        |       | .4707 | .2405 | .1591 | .0779 |       | .1409 |       | .0607  | -.3067 | -.2013 | -.1869 | -.1066 |        |
| 90.000  |        | .5750 | .4892 | .2575 | .1475 | .0829 |       | .1713 |       | -.0343 | -.3286 | -.2641 | -.2204 | -.0934 |        |
| 120.000 |        |       | .5026 | .3257 | .1638 | .2270 |       | .3391 |       | -.0943 | -.5147 | -.5145 | -.1701 | -.0694 |        |





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## TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB839)

ALPHA ( 4 ) = 7.897 BETA ( 2 ) = .182

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| 70.000  | -.1343 | -.2505 | -.3151 | -.0944 | -.1103 | -.1828 | -.2693 |        |        |        |
| 90.000  | -.0741 | -.1914 | -.2582 | -.0126 | -.2207 | -.2013 | -.2317 |        |        |        |
| 105.000 |        |        | -.0319 | .0611  | -.2893 | -.3115 | -.2849 |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.3917 |        |        |
| 120.000 | -.0686 | -.0870 | .1134  | .0423  | -.1576 | -.2869 | -.3595 | -.3447 |        |        |
| 135.000 |        |        | .1149  | .2408  | -.0836 | -.1920 | -.2450 |        |        |        |
| 150.000 | -.0170 | -.0333 | .1629  | .4463  | -.0211 | -.1225 | -.1926 |        |        |        |
| 165.000 | -.0121 |        | .1973  |        | .1794  | -.0563 | -.3632 |        |        |        |
| 180.000 | -.0089 | .0022  | .2289  | .4724  |        |        |        |        |        |        |

ALPHA ( 4 ) = 7.878 BETA ( 3 ) = 4.243 MACH = 1.2467 Q = 599.84 P = 551.34 RN/L = 3.0131

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 70.000  | 1.3033 | .9966 | .5360 | .3358 | .2710 |       |       | .1104 |        | .0891  | .0955  | .1024  | .0931  | .0432  | .0440 |
| 90.000  |        | .5197 | .5197 | .3505 | .2218 | .1222 |       | .0941 |        | .0688  |        |        | .0596  |        |       |
| 105.000 |        | .5242 | .4885 | .2776 | .1985 | .0696 |       | .0938 |        | .0596  | .0846  | .0598  | .0593  | .0081  | .0286 |
| 120.000 |        |       | .4602 | .2422 | .1609 | .0691 |       | .0812 |        | .0957  |        |        |        |        |       |
| 135.000 | .5254  |       | .4581 | .2422 | .1463 | .0668 |       | .1387 |        | .1023  | -.2554 | -.1859 | -.1843 | -.2081 |       |
| 150.000 |        |       | .4344 | .2712 | .1376 | .1330 |       | .1838 |        | .0291  | -.2970 | -.2341 | -.2341 | -.1620 |       |
| 165.000 |        |       |       |       |       |       |       | .3637 |        | -.0529 | -.3333 | -.4940 | -.2249 | -.0949 |       |
| 180.000 |        | .3980 |       | .3139 | .1137 | .1852 |       |       | .4378  | -.1805 | -.5597 | -.3632 | -.1904 | -.0481 |       |
|         |        |       |       |       |       |       |       |       | .4994  |        |        |        |        |        |       |
|         |        |       |       |       |       |       |       | .8030 |        | -.4208 | -.5361 | -.3056 | -.2277 | -.0455 |       |
|         |        |       |       |       |       |       |       | .8214 |        |        |        |        |        |        |       |
|         |        |       |       |       |       |       |       |       |        | -.5306 | -.4901 | -.3153 | -.2310 | -.0627 |       |
|         |        |       |       |       |       |       |       | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |

## PHI:

|         |        |        |        |        |        |        |        |        |  |  |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--|--|--|--|--|--|--|
| 70.000  | .0808  | .1495  | .1776  | .1312  | .0500  | -.0082 | -.0093 |        |  |  |  |  |  |  |  |
| 90.000  | .1016  |        | .2046  | .1466  | .0358  | .0736  | -.0593 |        |  |  |  |  |  |  |  |
| 105.000 | -.1155 | -.2884 | -.3154 | -.0945 | -.1434 | -.2440 | -.3077 |        |  |  |  |  |  |  |  |
| 120.000 | -.0557 | -.1858 | -.1353 | -.0408 | -.2236 | -.1960 | -.2771 |        |  |  |  |  |  |  |  |
| 135.000 |        |        | .0277  | -.0083 | -.3561 | -.3138 | -.3230 |        |  |  |  |  |  |  |  |
| 150.000 |        |        |        |        |        |        |        | -.4312 |  |  |  |  |  |  |  |
| 165.000 | -.0110 | -.0663 | .0875  | .0864  | -.2132 | -.3552 | -.4550 | -.3695 |  |  |  |  |  |  |  |
| 180.000 |        |        | .1937  | .2470  | -.1462 | -.2390 | -.2685 |        |  |  |  |  |  |  |  |
|         | -.0056 | -.0021 | .2324  | .3443  | -.0916 | -.2016 | -.2594 |        |  |  |  |  |  |  |  |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8839)

ALPHA ( 4 ) = 7.878 BETA ( 3 ) = 4.243

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 -.0188 .1820 .1228 -.1328 -.3912  
180.000 -.0372 .0110 .1614 .3904

ALPHA ( 5 ) = 11.869 BETA ( 1 ) = -3.849 MACH = 1.2475 Q = 600.06 P = 550.87 RV/L = 3.0127

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.3193 1.1117 .6643 .4843 .3579 .2400 .2009 .1622 .1434 .1371 .1622 .1247 .1341  
20.000 .7091 .5060 .3518 .2400 .2009 .1544 .1544 .1544 .1544 .1544 .1544 .1544 .1544  
40.000 .7792 .5460 .4128 .3035 .2400 .2009 .1622 .1434 .1371 .1622 .1247 .1341  
55.000 .7358 .5107 .3383 .2532 .2004 .1740 .1740 .1740 .1740 .1740 .1740 .1740 .1740  
70.000 .6631 .4508 .3174 .2407 .1938 .1938 .1938 .1938 .1938 .1938 .1938 .1938 .1938  
90.000 .6033 .4048 .2803 .2027 .1756 .1756 .1756 .1756 .1756 .1756 .1756 .1756 .1756  
120.000 .4759 .2950 .1775 .1775 .1775 .1775 .1775 .1775 .1775 .1775 .1775 .1775 .1775  
140.000 .3377 .2282 .1167 .1422 .1422 .1422 .1422 .1422 .1422 .1422 .1422 .1422 .1422  
150.000 .3377 .2282 .1167 .1422 .1422 .1422 .1422 .1422 .1422 .1422 .1422 .1422 .1422  
162.000 .3377 .2282 .1167 .1422 .1422 .1422 .1422 .1422 .1422 .1422 .1422 .1422 .1422  
165.000 .3377 .2282 .1167 .1422 .1422 .1422 .1422 .1422 .1422 .1422 .1422 .1422 .1422  
169.000 .3377 .2282 .1167 .1422 .1422 .1422 .1422 .1422 .1422 .1422 .1422 .1422 .1422  
174.000 .3377 .2282 .1167 .1422 .1422 .1422 .1422 .1422 .1422 .1422 .1422 .1422 .1422  
180.000 .3377 .2282 .1167 .1422 .1422 .1422 .1422 .1422 .1422 .1422 .1422 .1422 .1422

1.3193

.4607

.2511

.2334

.0957

.1271

.7836

X/LB

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .1904 .2737 .2893 .2136 .1234 .0953 .0754 .6110 .4493  
40.000 .2228 .3190 .3190 .2291 .1021 .1652 .0319 .5299 .3193  
70.000 .2531 .3805 .4113 .2277 .2240 .2107 .2550 .5299 .3193  
90.000 .1673 .2838 .3551 .0936 .2574 .2338 .2662 .5299 .3193  
105.000 .2854 .0140 .2892 .3835 .3074 .3074 .3074 .5299 .3193  
110.000 .1909 .2062 .0083 .0549 .1831 .2827 .3260 .5299 .3193  
120.000 .1909 .2062 .0083 .0549 .1831 .2827 .3260 .5299 .3193  
135.000 .1060 .2109 .0452 .3068 .0768 .1752 .2615 .5299 .3193  
150.000 .0678 .0469 .0469 .0469 .1818 .0194 .3931 .5299 .3193  
160.000 .0509 .0487 .0735 .4420 .1818 .0194 .3931 .5299 .3193

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8839)

ALPHA ( 5 ) = 11.810 BETA ( 2 ) = .187 MACH = 1.2475 Q = 600.06 P = 550.87 RN/L = 3.0127

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|-------|
| PHI     | 1.3253 | 1.1182 | .6679 | .4917 | .3704 | .2234 |       | .1991 | .1691  | .1355  | .1559  | .1605  | .1267  | .1376 |       |
| 20.000  |        |        | .6781 | .4829 | .3418 | .2234 |       | .1904 | .1535  | .1216  | .1300  | .1430  | .1090  | .1390 |       |
| 40.000  |        |        | .6868 | .4777 | .3516 | .2424 |       | .2019 | .1251  | .1677  | .1226  | .1271  | .2224  |       |       |
| 55.000  |        |        | .6141 | .4001 | .2935 | .1564 |       | .1196 | .1367  | .1677  | .1483  | .1821  | .2500  |       |       |
| 70.000  |        |        | .5478 | .3423 | .2307 | .1559 |       | .1269 | .0500  | .1367  | .1483  | .1821  | .2500  |       |       |
| 90.000  |        | .6139  | .5041 | .3128 | .2017 | .1246 |       | .1970 | -.0611 | .0500  | -.4335 | -.5499 | -.2252 |       |       |
| 120.000 |        |        | .4166 | .2564 | .1418 | .1352 |       | .4254 | -.3197 | -.0611 | -.4727 | -.2189 | -.0888 |       |       |
| 140.000 |        |        | .3236 | .2557 | .0942 | .1359 |       | .7451 | .5212  | -.3197 | -.4727 | -.2189 | -.0888 |       |       |
| 150.000 |        |        |       |       |       |       |       |       | .5523  |        |        |        |        |       |       |
| 162.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |       |       |
| 165.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |       |       |
| 169.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |       |       |
| 174.000 |        |        |       |       |       |       |       |       |        |        |        |        |        |       |       |
| 180.000 | 1.3253 | .4456  | .2738 | .2395 | .1034 | .1364 | .7878 | .7817 | -.4459 | -.5170 | -.3587 | -.1977 | -.0494 |       |       |
| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |       |       |

X/LB

PHI

|         |        |        |        |        |        |        |        |        |       |       |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--|--|--|--|--|
| 20.000  | .1848  | .3029  | .2981  | .2202  | .1249  | .0720  | .0823  |        | .6082 | .4434 |  |  |  |  |  |
| 40.000  | .2042  | .3182  | .3182  | .2323  | .1086  | .1586  | -.0090 |        | .4902 | .3015 |  |  |  |  |  |
| 70.000  | -.2338 | -.3790 | -.4184 | -.1987 | -.2577 | -.2694 | -.2429 |        |       |       |  |  |  |  |  |
| 90.000  | -.1396 | -.2564 | -.3355 | -.1004 | -.3063 | -.2560 | -.2941 |        |       |       |  |  |  |  |  |
| 105.000 |        | -.1862 | .0057  | .0057  | -.3513 | -.4228 | -.3147 |        |       |       |  |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        | -.4390 |       |       |  |  |  |  |  |
| 120.000 | -.0883 | -.1318 | .0241  | -.0255 | -.2047 | -.3101 | -.3885 | -.4071 |       |       |  |  |  |  |  |
| 135.000 |        |        | .0422  | .1536  | -.1356 | -.2254 | -.2868 |        |       |       |  |  |  |  |  |
| 150.000 | -.0614 | -.0917 | .0286  | .4238  | -.0666 | -.1702 | -.2207 |        |       |       |  |  |  |  |  |
| 165.000 | -.0399 |        | .0734  |        | .1689  | -.0981 | -.3977 |        |       |       |  |  |  |  |  |
| 180.000 | -.0312 | -.0225 | .1124  | .4633  |        |        |        |        |       |       |  |  |  |  |  |

ALPHA ( 5 ) = 11.866 BETA ( 3 ) = 4.252 MACH = 1.2475 Q = 600.06 P = 550.87 RN/L = 3.0127

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|-------|
| PHI     | 1.3123 | 1.1073 | .6586 | .4840 | .3565 | .1961 |       | .1876 | .1548  | .1381  | .1460  | .1678  | .1164  | .1267 |       |
| 20.000  |        |        | .6331 | .4485 | .3105 | .1961 |       | .1635 | .1253  | .1253  | .1031  | .1038  | .0693  | .1120 |       |
| 40.000  |        |        | .5880 | .4046 | .2926 | .1640 |       | .1381 | .0514  | .0514  | .1038  | .1165  | .0693  | .1120 |       |
| 55.000  |        |        | .4913 | .2834 | .1949 | .0461 |       | .0388 | .0549  | .0549  | .1031  | .1038  | .0693  | .1120 |       |
| 70.000  |        |        | .4328 | .2291 | .1426 | .0711 |       | .0608 | .1123  | .1123  | .1031  | .1038  | .0693  | .1120 |       |
| 90.000  |        | .4644  | .4087 | .2031 | .1277 | .0468 |       | .1680 | .0729  | .0729  | .1031  | .1038  | .0693  | .1120 |       |
| 120.000 |        |        | .3540 | .1928 | .0966 | .0867 |       | .3789 | -.0247 | -.3562 | -.4721 | -.3621 | -.1404 |       |       |



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB840) ( 05 AUG 75 )

## REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO  
 LREF = 474.6000 IN. YMRP = .0000 IN. YO  
 BREF = 936.0190 IN. ZMRP = 375.0000 IN. ZO  
 SCALE = .037

ALPHA ( 1 ) = -3.999 BETA ( 1 ) = -3.842 MACH = 1.1017 Q = 601.11 P = 707.47 RN/L = 3.1883

## SECTION ( 1 ) ORBITTER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | 0.000  | 0.080 | 0.230 | 0.460 | 0.700  | 1.120  | 1.580  | 1.660  | 1.770  | 2.040  | 2.510  | 3.010  | 3.780  | 4.970  | 5.740 |
|---------|--------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | 1.3179 | .5553 | .1347 | .0802 | .0135  | -.0456 | -.0676 | -.0182 | -.0598 | -.0845 | -.1424 | -.1301 | -.1002 | -.0265 |       |
| 20.000  |        |       | .1599 | .0535 | -.0402 | -.0675 | -.1578 | -.1062 | -.1062 | -.2370 | -.1981 | -.1571 | -.1484 | -.0481 |       |
| 40.000  |        |       | .3492 | .0866 | -.0077 | -.1864 | -.0220 | -.2504 | -.2504 | -.0607 | -.0155 | -.1727 | -.0863 | -.0101 |       |
| 55.000  |        |       | .5148 | .2748 | .1864  | .0955  | .1216  | -.0817 | -.0817 | -.3543 | -.3244 | -.0967 | -.0148 |        |       |
| 70.000  |        |       | .6274 | .3915 | .2998  | .2448  | .1541  | -.0183 | -.0183 | -.2874 | -.5412 | -.1079 | -.0412 |        |       |
| 90.000  |        | .8817 | .7030 | .4720 | .3538  | .2958  | .3994  | -.0270 | -.0270 | -.2898 | -.5193 | -.3284 | -.1687 | -.0408 |       |
| 120.000 |        |       | .7809 | .6070 | .4863  | .4949  |        |        |        |        |        |        |        |        |       |
| 140.000 |        |       |       |       |        |        | .8328  |        |        |        |        |        |        |        |       |
| 150.000 |        |       | .7802 | .6451 | .5466  | .5792  |        |        |        |        |        |        |        |        |       |
| 151.000 |        |       |       |       |        |        |        |        |        |        |        |        |        |        |       |
| 162.000 |        |       |       |       |        |        |        |        |        |        |        |        |        |        |       |
| 165.000 |        |       |       |       |        |        |        |        |        |        |        |        |        |        |       |
| 163.000 |        |       |       |       |        |        |        |        |        |        |        |        |        |        |       |
| 174.000 |        |       |       |       |        |        |        |        |        |        |        |        |        |        |       |
| 180.000 |        |       |       |       |        |        |        |        |        |        |        |        |        |        |       |
| X/LB    | 1.3179 | .9726 | .7251 | .6167 | .5367  | .5762  | .9774  | .8859  | -.4439 | -.4203 | -.2818 | -.1967 | -.0397 |        |       |
|         | .6520  | .7290 | .7790 | .8210 | .8790  | .9210  | .9600  | .9950  | -.5643 | -.4418 | -.2327 | -.2298 | -.0380 |        |       |

## PHI

|         |        |        |        |        |        |        |        |        |       |  |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--|--|--|--|--|--|
| 40.000  | -.0670 | -.0222 | -.0679 | -.1462 | -.2416 | -.2948 | -.1426 |        |       |  |  |  |  |  |  |
| 70.000  | -.0446 | -.0598 | -.0773 | -.1396 | -.2449 | -.1903 | -.2952 | .3069  | .2334 |  |  |  |  |  |  |
| 90.000  | .1355  | .1261  | .2621  | .3550  | .0833  | -.1002 | -.3203 | .1926  | .1361 |  |  |  |  |  |  |
| 105.000 | .1539  | .1261  | .3187  | .3548  | .0480  | -.0878 | -.1781 |        |       |  |  |  |  |  |  |
| 110.000 |        |        | .3774  | .3645  | -.0374 | -.1139 | -.1514 |        |       |  |  |  |  |  |  |
| 120.000 | .1505  | .2242  | .4809  | .4356  | -.1017 | -.0551 | -.0704 | -.4253 |       |  |  |  |  |  |  |
| 135.000 |        |        | .5325  | .5470  | -.0077 | .0879  | .0905  | -.2802 |       |  |  |  |  |  |  |
| 150.000 | .1608  | .2535  | .5303  | .5235  | .0926  | .1635  | .1660  |        |       |  |  |  |  |  |  |
| 165.000 | .1748  |        | .5110  | .5251  | .3251  | .1958  | -.3603 |        |       |  |  |  |  |  |  |
| 180.000 | .1726  | .3046  | .4959  | .5925  |        |        |        |        |       |  |  |  |  |  |  |

## PARAMETRIC DATA

RUDDER = 10.000 SFCBRK = 85.000  
 BOFLAP = 16.300 L-ELVN = 10.000  
 R-ELVN = 10.000 MACH = 1.100

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -1+0A/B/C/R ORB FUSELAGE

(XEB840)

ALPHA ( 1 ) = -3.997 BETA ( 2 ) = .194 MACH = 1.1017 Q = 601.11 P = 707.47 RVL = 3.1883

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     | 1.3228 | .5537 | .1446 | .0825 | .0224  |        |       | -.0122 | -.0504 | -.0846 | -.1400 | -.1232 | -.0879 | -.0854 |        |
| 20.000  |        |       | .1575 | .0704 | -.0101 | -.0403 |       | -.0352 | -.0839 | -.1771 | -.1896 | -.1905 | -.1430 | -.1051 | -.0183 |
| 40.000  |        |       | .2985 | .0810 | -.0045 | -.0448 |       | -.1004 | -.1062 | -.1062 |        |        |        |        |        |
| 55.000  |        |       | .4283 | .1988 | .1253  | .0577  |       | -.0136 | -.0895 | -.4666 | -.2439 | -.1119 | -.0145 |        |        |
| 70.000  |        |       | .5176 | .2871 | .2075  | .1678  |       | .0542  | -.1994 | -.4264 | -.4008 | -.1074 | -.0221 |        |        |
| 90.000  |        | .7427 | .5912 | .3554 | .2704  | .2024  |       | .0758  | -.1571 | -.3915 | -.6164 | -.1470 | -.0321 |        |        |
| 120.000 |        |       | .6849 | .5080 | .3870  | .4146  |       | .2951  | -.2272 | -.5069 | -.2832 | -.2086 | -.0238 |        |        |
| 140.000 |        |       |       |       |        |        |       | .7622  | -.4183 |        |        |        |        |        |        |
| 150.000 |        |       | .7316 | .6091 | .5094  | .5408  |       | .4596  |        |        |        |        |        |        |        |
| 162.000 |        |       |       |       |        |        |       | .5344  |        |        |        |        |        |        |        |
| 165.000 |        |       |       |       |        |        |       |        | -.4461 | -.4435 | -.2253 | -.2218 | -.0184 |        |        |
| 169.000 |        |       |       |       |        |        |       |        | -.4800 | -.5467 | -.2041 | -.2272 | -.0159 |        |        |
| 174.000 |        |       |       |       |        |        |       |        |        |        |        |        |        |        |        |
| 180.000 | 1.3228 | .9689 | .7366 | .6230 | .5455  | .5862  | .9690 | .8511  |        |        |        |        |        |        |        |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790  | .9210  | .9600 | .9990  | 1.0180 | 1.0460 |        |        |        |        |        |

## PHI

| X/LB    | .0000 | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|
| PHI     | .0578 | -.0297 | -.0690 | -.1590 | -.2353 | -.2947 | -.1254 |        | .3362 | .2706 |       |       |       |       |       |
| 40.000  |       |        | -.0716 | -.1460 | -.2226 | -.2011 | -.2692 |        | .1850 | .1451 |       |       |       |       |       |
| 70.000  |       | .1142  | .2584  | .3151  | .0392  | -.1410 | -.3580 |        |       |       |       |       |       |       |       |
| 90.000  |       | .1821  | .3064  | .3216  | -.0173 | -.1368 | -.2246 |        |       |       |       |       |       |       |       |
| 105.000 |       |        | .3718  | .2955  | -.1037 | -.1724 | -.2047 |        |       |       |       |       |       |       |       |
| 110.000 |       |        |        |        |        |        |        | -.4419 |       |       |       |       |       |       |       |
| 120.000 | .1653 | .2452  | .4171  | .2655  | -.1762 | -.1813 | -.1405 | -.3308 |       |       |       |       |       |       |       |
| 135.000 |       |        | .4916  | .5329  | -.0816 | -.0655 | .0403  |        |       |       |       |       |       |       |       |
| 150.000 | .1925 | .3087  | .5132  | .5732  | .0246  | .0205  | .1257  |        |       |       |       |       |       |       |       |
| 165.000 | .1969 |        | .5113  |        | .2286  | .0622  | -.3950 |        |       |       |       |       |       |       |       |
| 180.000 | .1811 | .3163  | .5140  | .6490  |        |        |        |        |       |       |       |       |       |       |       |

ALPHA ( 1 ) = -3.995 BETA ( 3 ) = 4.277 MACH = 1.1017 Q = 601.11 P = 707.47 RVL = 3.1883

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0090 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | 1.3063 | .5352 | .1287 | .0835 | .0212  |        |       | -.0156 | -.0412 | -.0894 | -.1410 | -.1334 | -.1044 | -.0385 |       |
| 20.000  |        |       | .1337 | .0688 | -.0161 | -.0534 |       | -.0145 | -.0684 | -.1393 | -.1629 | -.1426 | -.0907 | .0239  |       |
| 40.000  |        |       | .2394 | .0513 | .0009  | -.0238 |       | -.0628 | -.1397 | -.1397 |        |        |        |        |       |
| 55.000  |        |       | .3359 | .1304 | .0679  | .0287  |       | -.0392 | -.1478 | -.5230 | -.3041 | -.1165 | -.0172 |        |       |
| 70.000  |        |       | .4034 | .1797 | .1292  | .1032  |       | .0037  | -.3002 | -.5038 | -.4663 | -.1223 | -.0107 |        |       |
| 90.000  |        | .5945 | .4755 | .2366 | .1899  | .1150  |       | .0042  | -.2846 | -.4842 | -.6943 | -.2134 | -.0434 |        |       |
| 120.000 |        |       | .5846 | .4022 | .2774  | .3082  |       | .1837  |        |        |        |        |        |        |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB840)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 1 ) = -3.995 BETA ( 3 ) = 4.277

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Phi     |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| X/LB    | 1.3063 | .9453 | .7326 | .6176 | .5381 | .5759 | .8149 | .8382 |       |       |       |       |       |       |       |
| Phi     |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

Phi

|         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| 140.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 150.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 151.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 162.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 165.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 169.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 174.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 180.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

ALPHA ( 2 ) = .015 BETA ( 1 ) = -3.867 MACH = 1.1001 Q = 600.08 P = 708.37 Rn/L = 3.1860

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Phi     |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| X/LB    | 1.3271 | .6897 | .2559 | .1677 | .0745 | .0251 | .0234 |       |       |       |       |       |       |       |       |
| Phi     |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

.9393



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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB40)

ALPHA ( 2 ) = .018 BETA ( 2 ) = .181

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520 | .7290  | .7790 | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|-------|--------|-------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |       |        |       |       |        |        |        |        |        |        |
| 70.000  | .0249 | -.1446 | .1322 | .2400 | .0038  | -.1517 | -.3666 |        |        |        |
| 90.000  | .0522 | -.0676 | .2087 | .2214 | -.0436 | -.1503 | -.2524 |        |        |        |
| 105.000 |       |        | .2837 | .2012 | -.1269 | -.2053 | -.2731 |        |        |        |
| 110.000 |       |        |       |       |        |        |        | -.4669 |        |        |
| 120.000 | .0653 | .0953  | .3405 | .2096 | -.1741 | -.2303 | -.2730 | -.3147 |        |        |
| 135.000 |       |        | .3797 | .4129 | -.1009 | -.1436 | -.1486 |        |        |        |
| 150.000 | .0954 | .1893  | .4055 | .4538 | -.0266 | -.0952 | .0793  |        |        |        |
| 165.000 | .0968 |        | .4132 |       | .1877  | -.0322 | -.3990 |        |        |        |
| 180.000 | .0939 | .1976  | .4219 | .5411 |        |        |        |        |        |        |

ALPHA ( 2 ) = .012 BETA ( 3 ) = 4.250 MACH = 1.1001 Q = 600.08 P = 708.37 RN/L = 3.1860

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740  |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |        |
| 20.000  | 1.3172 | .6740 | .2475 | .1771 | .0784 |       |       | .0211 |        | .0096  | -.0397 | -.0922 | -.0896 | -.1058 | -.9358 |
| 40.000  |        |       | .2473 | .1478 | .0364 | .0246 |       | .0274 |        | -.0098 | -.0418 | -.1297 | -.0997 | -.0917 | .0132  |
| 60.000  |        |       | .3278 | .1548 | .0545 | .0592 |       | .0279 |        | -.0652 | -.0794 | -.4831 | -.2825 | -.2096 | -.0457 |
| 70.000  |        |       | .3936 | .1993 | .1190 | .1051 |       | .0317 |        | -.0794 | -.0794 | -.4831 | -.2825 | -.2096 | -.0457 |
| 90.000  |        | .5727 | .4319 | .2155 | .1355 | .1464 |       | .0487 |        | -.2167 | -.4823 | -.3746 | -.1888 | -.0417 | -.0351 |
| 120.000 |        |       | .4717 | .2502 | .1537 | .1629 |       | .0539 |        | -.2561 | -.4812 | -.6637 | -.1700 | -.0351 |        |
| 140.000 |        |       | .5336 | .3629 | .2495 | .3143 |       | .2216 |        | -.4588 | -.5900 | -.3317 | -.2582 | -.0382 |        |
| 150.000 |        |       | .5749 | .4722 | .3700 | .4276 |       | .6550 |        | .3398  |        |        |        |        |        |
| 160.000 |        |       |       |       |       |       |       | .4248 |        |        |        |        |        |        |        |
| 180.000 |        |       |       |       |       |       |       |       | .7779  | -.5048 | -.6155 | -.2961 | -.2770 | -.0406 |        |
| PHI     |        |       |       |       |       |       |       |       |        |        |        |        |        |        |        |
| 1.3172  | .8218  | .6143 | .5139 | .4366 | .5000 | .8754 |       | .7952 |        | -.6122 | -.5051 | -.3001 | -.2433 | -.0467 |        |
| 1.6520  | .7290  | .7790 | .8210 | .8790 | .9210 | .9600 |       | .9990 | 1.0180 | 1.0460 |        |        |        |        |        |

X/LB

PHI

|         |       |        |       |        |        |        |        |        |  |  |  |  |  |  |  |
|---------|-------|--------|-------|--------|--------|--------|--------|--------|--|--|--|--|--|--|--|
| 70.000  | .1006 | .0573  | .0141 | -.0679 | -.1620 | -.2007 | -.0621 |        |  |  |  |  |  |  |  |
| 90.000  | .0922 |        | .0243 | -.0508 | -.1588 | -.1276 | -.2425 |        |  |  |  |  |  |  |  |
| 70.000  | .0422 | -.1014 | .1146 | .2065  | -.0473 | -.1972 | -.4113 |        |  |  |  |  |  |  |  |
| 90.000  | .0752 | -.0106 | .1683 | .1929  | -.1169 | -.2160 | -.2974 |        |  |  |  |  |  |  |  |
| 120.000 |       |        | .2394 | .1528  | -.2060 | -.2753 | -.3243 |        |  |  |  |  |  |  |  |
| 130.000 |       |        |       |        |        |        |        | -.5140 |  |  |  |  |  |  |  |
| 120.000 | .1016 | .1139  | .2746 | .0789  | -.2864 | -.3461 | -.3852 | -.3984 |  |  |  |  |  |  |  |
| 135.000 |       |        | .3675 | .3949  | -.1958 | -.2578 | -.2922 |        |  |  |  |  |  |  |  |
| 150.000 | .1094 | .2013  | .3944 | .4088  | -.0948 | -.2047 | -.2848 |        |  |  |  |  |  |  |  |

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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ALPHA ( 2 ) = .012 BETA ( 3 ) = 4.250

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8840)

SECTION ( 1 ) ORBITTER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520 | .7290 | .7790 | .8210 | .8790 | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|-------|-------|-------|-------|-------|--------|--------|-------|--------|--------|
| PHI     |       |       |       |       | .1113 | -.1301 | -.4240 |       |        |        |
| 165.000 | .1006 | .3970 |       |       |       |        |        |       |        |        |
| 180.000 | .1042 | .2130 | .4102 | .4609 |       |        |        |       |        |        |

ALPHA ( 3 ) = 3.919 BETA ( 1 ) = -3.865 MACH = 1.1005 Q = 600.31 P = 708.14 RN/L = 3.1848

SECTION ( 1 ) ORBITTER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        | .8231 | .3835 | .2634 | .1709 |       |       | .0915 | .0455  | .0153  | -.0316 | -.0299 | -.0582 | -.0412 |       |
| 20.000  | 1.3196 | .4281 | .5718 | .3317 | .2173 | .0846 | .0830 | .0830 | .0238  | .0101  | -.0163 | -.0389 | -.0070 | -.0648 | .0093 |
| 40.000  |        |       | .6483 | .4274 | .3288 | .2536 | .1778 | .0944 | .0745  | .0833  | -.3267 | -.1304 | -.1410 | -.1044 |       |
| 55.000  |        |       | .6664 | .4432 | .3376 | .2974 | .2014 | .2297 | .0292  | .0833  | -.3423 | -.1863 | -.1988 | -.1021 |       |
| 70.000  |        | .8285 | .6664 | .4583 | .3425 | .3243 | .2297 | .4198 | -.0017 | .0824  | -.3137 | -.5381 | -.3049 | -.1650 |       |
| 90.000  |        |       | .6388 | .4710 | .3699 | .4189 | .4198 |       | -.0824 | -.3269 | -.6730 | -.4921 | -.2077 | -.0827 |       |
| 140.000 |        |       | .5638 | .4385 | .3491 | .4382 | .7876 |       | .5040  |        |        |        |        |        |       |
| 150.000 |        |       |       |       |       |       |       |       | .5338  |        |        |        |        |        |       |
| 162.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 165.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 169.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 174.000 |        |       |       |       |       |       |       |       |        |        |        |        |        |        |       |
| 190.000 | 1.3196 | .7174 | .4852 | .4125 | .3453 | .4328 | .8998 | .7324 | -.5488 | -.5986 | -.4487 | -.2205 | -.0674 |        |       |

X/LB

PHI

| X/LB    | .6520  | .7230  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|--------|--------|--------|-------|--------|--------|
| PHI     |        | .1687  | .1272  | .0353 | -.0677 | -.0769 | .0565  |       | .4427  | .2919  |
| 40.000  | .1588  |        | .1470  | .0419 | -.0837 | -.0029 | -.2365 |       | .4131  | .2007  |
| 70.000  | -.0608 | -.2455 | .3108  | .1613 | -.0188 | -.1471 | -.3851 |       |        |        |
| 90.000  | -.0245 | -.1745 | -.0759 | .1469 | -.0406 | -.1752 | -.2741 |       |        |        |
| 105.000 |        |        | .1412  | .1443 | -.1306 | -.2443 | -.2989 |       |        |        |
| 120.000 | -.0658 | -.0899 | .2744  | .1502 | -.1698 | -.2349 | -.2490 |       |        |        |
| 135.000 |        |        | .3085  | .3052 | -.1542 | -.1490 | -.1870 |       |        |        |
| 150.000 | .0411  | .1076  | .3075  | .3164 | -.0797 | -.1540 | -.0693 |       |        |        |
| 155.000 | .0590  |        | .3138  | .1999 | .0178  | -.4109 |        |       |        |        |
| 180.000 | .0702  | .1405  | .3135  | .3845 |        |        |        |       |        |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) - 140A/B/C/R ORB FUSELAGE

(XE8840)

ALPHA ( 3 ) = 3.917 BETA ( 2 ) = .176 MACH = 1.1005 Q = 600.31 P = 708.14 RN/L = 3.1848

SECTION ( 1 ) ORBITTER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | 1.3265 | .8251 | .2692 | .1683 |       |       | .1044 | .0503  | .0170  | -.0304 | -.0327 | -.0554 | -.0374 |       |
| 20.000  |       | .4020  | .2622 | .1402 | .0685 |       |       | .0952 | .0312  |        |        |        |        |        |       |
| 40.000  |       | .4992  | .2881 | .1829 | .1390 |       |       | .1061 | .0265  | -.0191 | -.0528 | -.0266 | -.0752 | .0018  |       |
| 55.000  |       | .5422  | .3339 | .2398 | .1924 |       |       | .1325 | .0293  |        |        |        |        |        |       |
| 70.000  |       | .5502  | .3369 | .2374 | .2233 |       |       | .1389 | .0222  | -.3837 | -.2122 | -.2039 | -.1014 |        |       |
| 90.000  |       | .5622  | .3546 | .2416 | .2521 |       |       | .1625 | -.0609 | -.4108 | -.2660 | -.2521 | -.0846 |        |       |
| 120.000 |       | .5648  | .3997 | .2924 | .3701 |       |       | .3432 | -.1145 | -.3820 | -.6004 | -.2171 | -.0884 |        |       |
| 140.000 |       |        |       |       |       |       |       |       | -.2106 |        |        |        |        |        |       |
| 150.000 |       | .5353  | .4251 | .3284 | .4224 |       |       | .7093 | -.4989 | -.6781 | -.4636 | -.2028 | -.0461 |        |       |
| 162.000 |       |        |       |       |       |       |       | .4276 |        |        |        |        |        |        |       |
| 165.000 |       |        |       |       |       |       |       | .4786 |        |        |        |        |        |        |       |
| 169.000 |       |        |       |       |       |       |       |       | -.5516 | -.5737 | -.3511 | -.2287 | -.0400 |        |       |
| 174.000 |       |        |       |       |       |       |       | .7912 |        |        |        |        |        |        |       |
| 180.000 |       | 1.3265 | .7076 | .4159 | .3541 | .4444 | .8818 | .7718 | -.6795 | -.6692 | -.3308 | -.2417 | -.0369 |        |       |
| X/LB    | .6520 | .7290  | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |

PHI

| X/LB    | .000 | .1478  | .1506  | .1223  | .0367 | -.0638 | -.0692 | -.0303 |
|---------|------|--------|--------|--------|-------|--------|--------|--------|
| 40.000  |      | .1287  |        | .1358  | .0487 | -.0590 | -.0199 | -.2014 |
| 70.000  |      | -.0571 | -.2492 | -.2306 | .1382 | -.0529 | -.1697 | -.3959 |
| 90.000  |      | -.0301 | -.1766 | .0246  | .1190 | -.1157 | -.1895 | -.2724 |
| 105.000 |      |        |        | .1687  | .0871 | -.1815 | -.2598 | -.3053 |
| 110.000 |      |        |        |        |       |        |        | -.5100 |
| 120.000 |      | .0018  | -.0376 | .2294  | .0995 | -.1999 | -.2780 | -.3196 |
| 140.000 |      |        |        | .2680  | .3789 | -.1267 | -.1976 | -.2472 |
| 150.000 |      | .0475  | .0598  | .3075  | .4066 | -.0600 | -.1452 | -.2244 |
| 165.000 |      | .0648  |        | .3200  |       | .1414  | -.0840 | -.4197 |
| 180.000 |      | .0697  | .0810  | .3393  | .5010 |        |        |        |

ALPHA ( 3 ) = 3.924 BETA ( 3 ) = 4.244 MACH = 1.1005 Q = 600.31 P = 708.14 RN/L = 3.1848

SECTION ( 1 ) ORBITTER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | 1.3111 | .8096 | .2656 | .1618 |       |       | .0970 | .0483  | .0060  | -.0291 | -.0348 | -.0662 | -.0401 |       |
| 20.000  |       | .4020  | .2622 | .1402 | .0685 |       |       | .0887 | .0268  |        |        |        |        |        |       |
| 40.000  |       | .4194  | .2444 | .1449 | .1001 |       |       | .1034 | .0187  | -.0311 | -.0714 | -.0646 | -.0988 | .0101  |       |
| 55.000  |       | .4342  | .2434 | .1616 | .1352 |       |       | .0937 | -.0054 |        |        |        |        |        |       |
| 70.000  |       | .4378  | .2314 | .1498 | .1661 |       |       | .0979 | -.0271 | -.4301 | -.2823 | -.2599 | -.0922 |        |       |
| 90.000  |       | .5380  | .4550 | .2489 | .1486 | .1857 |       | .1071 | -.1414 | -.4700 | -.3340 | -.2543 | -.0636 |        |       |
| 120.000 |       |        | .4810 | .3163 | .2121 | .3090 |       | .2548 | -.2199 | -.4670 | -.6445 | -.1929 | -.0451 |        |       |



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8B40)

ALPHA ( 4 ) = 7.901 BETA ( 1 ) = -3.860

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0090  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 180.000 | 1.2870 | .5777  | .3677  | .3188  | .2417  | .3703  |        | .6864  |        | -.7044 | -.6345 | -.3957 | -.2123 | -.0586 |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| .000    | .2411  | .2498  | .2007  | .0998  | .0340  | .0347  | -.0402 |        | .5227  | .3260  |        |        |        |        |       |
| 40.000  | .2418  | .2208  | .2208  | .1160  | .1049  | .0340  | -.1752 |        | .4563  | .2039  |        |        |        |        |       |
| 70.000  | -.0947 | -.3190 | -.0075 | -.0822 | -.1750 | -.3956 |        |        |        |        |        |        |        |        |       |
| 90.000  | -.0664 | -.2538 | -.2871 | .0161  | -.1187 | -.2118 | -.2788 |        |        |        |        |        |        |        |       |
| 105.000 |        | .0199  | .0816  | .0816  | -.1863 | -.2837 | -.3130 |        |        |        |        |        |        |        |       |
| 110.000 |        |        |        |        |        |        |        | -.4783 |        |        |        |        |        |        |       |
| 120.000 | -.1653 | -.1814 | .1714  | .1177  | -.2188 | -.2798 | -.3011 | -.3745 |        |        |        |        |        |        |       |
| 135.000 |        |        | .1563  | .3426  | -.1847 | -.2086 | -.2474 |        |        |        |        |        |        |        |       |
| 150.000 | -.0107 | -.0527 | .1733  | .4108  | -.0329 | -.1459 | -.2382 |        |        |        |        |        |        |        |       |
| 165.000 | .0421  | .2270  | .2270  | .1527  | -.0412 | -.4380 |        |        |        |        |        |        |        |        |       |
| 180.000 | .0576  | .0047  | .2649  | .4859  |        |        |        |        |        |        |        |        |        |        |       |

ALPHA ( 4 ) = 7.905 BETA ( 2 ) = .181 MACH = 1.1015 Q = 600.67 P = 707.22 RN/L = 3.1834

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580  | .1660 | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|-------|-------|--------|-------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |       |       |        |       |        |        |        |        |        |        |       |
| .000    | 1.2919 | .9479 | .5129 | .3696 | .2610 |       |        | .1455 |        | .1136  | .0728  | .0392  | .0354  | .0132  | .0203 |
| 20.000  |        |       | .5284 | .3670 | .2350 | .1616 |        | .1436 |        | .1039  |        |        |        |        |       |
| 40.000  |        |       | .5860 | .3830 | .2737 | .2084 |        | .1639 |        | .1167  | .0523  | .0125  | .0299  | -.0101 | .0326 |
| 55.000  |        |       | .5730 | .3700 | .2681 | .2159 |        | .1556 |        | .0922  |        |        |        |        |       |
| 70.000  |        |       | .5405 | .3397 | .2323 | .2315 |        | .1610 |        | .0681  | -.3240 | -.2048 | -.1973 | -.2110 |       |
| 90.000  | .6376  |       | .5228 | .3300 | .2259 | .2496 |        | .1867 |        | -.0058 | -.3754 | -.2423 | -.2654 | -.1770 |       |
| 120.000 |        |       | .4815 | .3196 | .2235 | .3387 |        | .3556 |        | -.0902 | -.3990 | -.5740 | -.3616 | -.1480 |       |
| 140.000 |        |       | .4200 | .3229 | .2287 | .3606 |        | .6890 |        | -.2039 | -.7321 | -.5311 | -.2129 | -.0735 |       |
| 150.000 |        |       |       |       |       |       |        |       | .4189  |        |        |        |        |        |       |
| 162.000 |        |       |       |       |       |       |        |       | .4492  |        |        |        |        |        |       |
| 165.000 |        |       |       |       |       |       |        |       |        | -.5998 | -.6272 | -.4038 | -.2053 | -.0483 |       |
| 174.000 |        |       |       |       |       | .8224 |        | .7449 |        |        |        |        |        |        |       |
| 190.000 | 1.2919 | .5614 | .3820 | .3067 | .2450 | .3773 | .8224  | .7281 |        | -.7328 | -.7090 | -.3812 | -.2025 | -.0379 |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600  | .9990 | 1.0180 | 1.0460 |        |        |        |        |       |
| PHI     |        |       |       |       |       |       |        |       |        |        |        |        |        |        |       |
| .000    | .2405  | .2497 | .2009 | .0984 | .0597 | .0428 | -.0262 |       | .5233  | .3256  |        |        |        |        |       |
| 40.000  | .2403  |       | .2233 | .1149 | .1118 | .0479 | -.1444 |       | .4239  | .1913  |        |        |        |        |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-07310A148) -140A/B/C/R ORB FUSELAGE

(XEB840)

ALPHA ( 4 ) = 7.905 BETA ( 2 ) = .181

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6540 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

70.000 -.1158 -.3420 -.3932 .0427 -.0975 -.2040 -.4059  
 90.000 -.0702 -.2284 -.1915 -.0036 -.1796 -.2390 -.2854  
 105.000 .0139 .0540 -.2547 -.3089 -.3540  
 110.000  
 120.000 -.0402 -.1111 .1290 .0823 -.2701 -.3325 -.3667  
 135.000 .1703 .3452 -.1742 -.2559 -.3101  
 150.000 .0505 -.0407 .2330 .5279 -.1101 -.2149 -.2759  
 165.000 .0655 .2664 .0875 -.1539 -.4432  
 180.000 .0769 -.0016 .3026 .5396

-.5277  
 -.4293

ALPHA ( 4 ) = 7.904 BETA ( 3 ) = 4.239 MACH = 1.1015 Q = 600.67 P = 707.22 RN/L = 3.1634

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.2771 .9323 .5013 .3671 .2528 .1406 .1453 .1123 .0665 .0361 .0391 .0019 .0173  
 20.000 .4871 .3299 .4876 .3148 .2137 .1627 .1401 .0870 .0743 .0195 -.0217 -.0132 -.0382 .0165  
 40.000 .4522 .2656 .1726 .1368 .1267 .1123 .1040 .0408 .0141  
 70.000 .4909 .4244 .2342 .1368 .1627 .1123 .0803 -.3658 -.2772 -.2668 -.1839  
 90.000 .4230 .2342 .1290 .1953 .1321 .1321 -.4314 -.3116 -.3236 -.1439  
 120.000 .4102 .2573 .1540 .2995 .2821 .1792 -.4633 -.6268 -.2506 -.0942  
 140.000 .3841 .2972 .1894 .3363 .6165 .3158 -.3158 -.7289 -.4413 -.1961 -.0464  
 150.000 .3259  
 160.000 .3786

.7136  
 .7967

1.2771 .5364 .3789 .3229 .2311 .3655 .7193  
 .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .2370 .2462 .1957 .0921 .0168 .0356 -.0464  
 40.000 .2641 .2141 .1100 .0422 .0481 -.1265  
 70.000 -.0853 -.3156 .0245 .1531 -.2605 -.4252  
 90.000 -.0327 -.2034 .0153 .0153 .2277 .2883 .3324  
 105.000 .0297 .0398 .2936 .3861 .4087  
 110.000  
 120.000 .0483 -.0786 .1086 -.0421 .3389 .3969 .5090  
 135.000 .2330 .2969 .2577 .3487 .3690  
 150.000 .0965 -.0026 .2909 .4243 .3165 .3731

.5194 .3233  
 .3699 .1674

-.5444  
 -.4720

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XE8B40)

ALPHA ( 4 ) = 7.904 BETA ( 3 ) = 4.239

SECTION ( 110RB11TER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520 | .7290 | .7790 | .8210 | .8790 | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|-------|-------|-------|-------|-------|--------|--------|-------|--------|--------|
| PHI     |       |       |       |       |       |        |        |       |        |        |
| 165.000 | .0918 | .2782 |       |       | .0146 | -.2503 | -.4562 |       |        |        |
| 180.000 | .0617 | .0068 | .2599 | .4858 |       |        |        |       |        |        |

ALPHA ( 5 ) = 11.906 BETA ( 1 ) = -3.844 MACH = 1.0995 Q = 600.02 P = 709.07 RVL = 3.1837

SECTION ( 110RB11TER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|
| PHI     |        |       |       |       |       |        |        |        |        |        |        |        |       |       |       |
| 1.2323  | 1.0520 | .6335 | .4679 | .3487 | .2527 | .2016  | .2068  | .1858  | .1269  | .1063  | .1155  | .0943  | .2136 |       |       |
| 20.000  | .6780  | .4904 | .3513 | .2527 | .2016 | .2068  | .1858  | .1269  | .1063  | .1155  | .0943  | .2136  |       |       |       |
| 40.000  | .7456  | .5307 | .4084 | .3188 | .2513 | .2094  | .1762  | .1382  | .1169  | .1391  | .0950  | .2466  |       |       |       |
| 50.000  | .7014  | .4942 | .3749 | .2874 | .2185 | .1559  | .1035  | -.2335 | -.1104 | -.1236 | -.2351 |        |       |       |       |
| 70.000  | .6266  | .4315 | .3093 | .2860 | .2221 | .1035  | -.2993 | -.1455 | -.1910 | -.2860 |        |        |       |       |       |
| 90.000  | .5876  | .3845 | .2803 | .2817 | .2454 | .0157  | -.3449 | -.5150 | -.7251 | -.3575 |        |        |       |       |       |
| 120.000 | .4421  | .2808 | .1797 | .2928 | .7488 | -.0851 | -.2149 | -.7803 | -.6805 | -.2912 | -.1361 |        |       |       |       |
| 140.000 | .3081  | .2143 | .1299 | .3051 | .7554 | .4692  | .4774  | -.6545 | -.7336 | -.5499 | -.2481 | -.1021 |       |       |       |
| 160.000 |        |       |       |       | .8068 | .6588  |        | -.7463 | -.6859 | -.4278 | -.1976 | -.0547 |       |       |       |
| 180.000 |        |       |       |       |       |        |        |        |        |        |        |        |       |       |       |

X/LB

PHI

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600 | .9990 | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|-------|-------|--------|--------|
| PHI     |        |        |        |        |        |        |       |       |        |        |
| 1.2323  | .4140  | .2349  | .2178  | .1389  | .3096  | .8068  | .6588 |       |        |        |
| 20.000  | .2752  | .1820  | .1593  | .0609  | -.0118 |        |       |       |        |        |
| 40.000  | .3044  | .2079  | .1711  | .0811  | -.1447 |        |       |       |        |        |
| 70.000  | -.1446 | -.4657 | -.1469 | -.1653 | -.3622 |        |       |       |        |        |
| 90.000  | -.0696 | -.3878 | -.0598 | -.1912 | -.2559 |        |       |       |        |        |
| 105.000 |        | -.1424 | .0423  | -.3498 | -.2613 | -.3193 |       |       |        |        |
| 120.000 | -.1799 | -.1976 | .0506  | -.2827 | -.2951 | -.4486 |       |       |        |        |
| 135.000 |        | .0634  | .2326  | -.2411 | -.2738 | -.3062 |       |       |        |        |
| 150.000 | -.0535 | -.1790 | .0653  | -.1557 | -.2443 | -.3426 |       |       |        |        |
| 165.000 | .0412  | .1539  | .1539  | .0845  | -.1176 | -.4722 |       |       |        |        |
| 180.000 | .0792  | -.0383 | .2354  | .5102  |        |        |       |       |        |        |



(04883X)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

$$\text{ALPHA} (5) = 11.865 \quad \text{BETA} (3) = 4.250$$

SECTION 1103BITER FUSELAGE

DEPENDENT VARIABLE CP

[illegible]

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB41) ( 05 AUG 75 )

## REFERENCE DATA

SREF = 2630.0000 SQ.FT. XMRP = 1076.6800 IN. XO  
 LREF = 474.8300 IN. YMRP = .0000 IN. YO  
 BREF = 926.0680 IN. ZMRP = 375.0000 IN. ZO  
 SCALE = .0300

ALPHA ( 1 ) = -3.997 BETA ( 1 ) = -3.840 MACH = .89993 Q = 596.67 P = 1057.8 RN/L = 3.5780

## PARAMETRIC DATA

RUDDER = 10.000 SPOBRK = 85.000  
 BDF LAP = 16.300 L-ELVN = 10.000  
 R-ELVN = 10.000 MACH = .900

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230  | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4370  | .5740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | 1.1878 | .3562  | -.0767 | -.1083 | -.1741 | -.2407 | -.2656 | -.2177 | -.2137 | -.1792 | -.0690 | -.0295 | .0073  | -.0118 |       |
| 20.000  |        | -.0503 | -.1338 | -.2327 | -.2450 | -.2450 | -.3555 | -.2656 | -.2423 | -.4295 | -.1238 | -.0830 | -.0368 | -.0396 |       |
| 40.000  |        | .1492  | -.1045 | .0945  | .0017  | -.0957 | -.1936 | -.3555 | -.4295 | -.3912 | -.1238 | -.0830 | -.0368 | -.0396 |       |
| 55.000  |        | .3350  | .0945  | .0945  | .0017  | -.0957 | -.1936 | -.1936 | -.2819 | -.2246 | -.0142 | .0829  | .1977  |        |       |
| 70.000  |        | .4602  | .2184  | .2184  | .1280  | .0658  | -.0664 | -.2246 | -.3027 | -.6542 | -.0547 | .0462  | .1004  |        |       |
| 90.000  |        | .7308  | .5478  | .3069  | .2057  | .1155  | -.1837 | -.3027 | -.3027 | -.5777 | -.1163 | .0323  | .0737  |        |       |
| 120.000 |        | .6390  | .4557  | .3345  | .3204  |        |        | -.2295 | -.1575 | -.2744 | -.0503 | .0254  | .0517  |        |       |
| 140.000 |        | .6390  | .5001  | .4001  | .4150  |        |        | .6560  | .3315  | -.2744 | -.0503 | .0254  | .0517  |        |       |
| 150.000 |        |        |        |        |        |        |        | .3905  |        |        |        |        |        |        |       |
| 162.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 165.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 169.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 174.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| 180.000 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| X/LB    | 1.1878 | .8384  | .5794  | .4653  | .3983  | .4127  | .8280  | .6397  | -.9380 | -.7642 | -.0045 | .0120  | .0349  |        |       |
|         | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9390  | 1.0180 | 1.0460 |        |        |        |        |       |

| PHI     | .000 | .1224  | -.1743 | -.2111 | -.2922 | -.1727 | -.1621 | -.0156 | .3071 | .0947 |
|---------|------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| 40.000  |      | -.2299 | -.1957 | -.2715 | -.2715 | -.1373 | -.1687 | -.0691 | .3071 | .0947 |
| 70.000  |      | .0371  | -.0221 | .0651  | .1645  | -.1288 | -.3462 | -.1789 | .2149 | .0228 |
| 90.000  |      | .0632  | .0201  | .1348  | .2012  | -.1720 | -.2802 | -.2136 |       |       |
| 105.000 |      |        | .2008  | .2493  | .2493  | -.2646 | -.2936 | -.2375 |       |       |
| 110.000 |      |        |        |        |        |        |        |        |       |       |
| 120.000 |      | .0720  | .1076  | .3044  | .3530  | -.2882 | -.2352 | -.2984 |       |       |
| 135.000 |      |        |        | .3573  | .4506  | -.1485 | -.0570 | -.0890 |       |       |
| 150.000 |      | .0826  | .1526  | .3712  | .4537  | -.0395 | .0299  | .0218  |       |       |
| 155.000 |      | .0765  | .3476  | .1597  | .0426  | -.3444 |        |        |       |       |
| 162.000 |      | .0636  | .1457  | .3282  | .4917  |        |        |        |       |       |



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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE88411)

ALPHA ( 1 ) = -3.992 BETA ( 3 ) = 4.274

SECTION : 11ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 140.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 151.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 152.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 169.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 180.000 | 1.1791 | .8092 | .5885 | .4698 | .3878 | .4132 | .7568 | .6624 | .4795  | .3067  | .3057 | .1650 | .1580 | .1660 | .1770 |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |

PHI

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|
| 140.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 151.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 152.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 169.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 180.000 | 1.1791 | .8092 | .5885 | .4698 | .3878 | .4132 | .7568 | .6624 | .4795  | .3067  | .3057 | .1650 | .1580 | .1660 | .1770 |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |

ALPHA ( 2 ) = .052 BETA ( 1 ) = -3.863 MACH = .89853 Q = 598.47 P = 1059.0 RV/L = 3.5741

SECTION : 11ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |        |        |        |        |        |        |        |        |        |        |        |       |
| 140.000 |        |       |       |        |        |        |        |        |        |        |        |        |        |        |       |
| 150.000 |        |       |       |        |        |        |        |        |        |        |        |        |        |        |       |
| 151.000 |        |       |       |        |        |        |        |        |        |        |        |        |        |        |       |
| 152.000 |        |       |       |        |        |        |        |        |        |        |        |        |        |        |       |
| 165.000 |        |       |       |        |        |        |        |        |        |        |        |        |        |        |       |
| 169.000 |        |       |       |        |        |        |        |        |        |        |        |        |        |        |       |
| 174.000 |        |       |       |        |        |        |        |        |        |        |        |        |        |        |       |
| 180.000 | 1.2028 | .5166 | .0702 | -.0081 | -.0796 | -.1138 | -.1608 | -.1586 | -.1871 | -.1904 | -.1639 | -.1698 | -.0728 | -.0177 | .0291 |
| X/LB    | .0000  | .0080 | .0230 | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |

.7807

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) - 140A/B/C/R ORB FUSELAGE

(XEB9+1)

ALPHA ( 2 ) = .052 BETA ( 1 ) = -3.863

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040   | .2510  | .3010  | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|---------|--------|--------|-------|-------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |         |        |        |       |       |       |
| 150.000 | 1.2020 | .7107 | .4582 | .3619 | .2913 | .3354 |       | .5873 |        | -1.0514 | -.8579 | -.0562 | .0121 | .0091 |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460  |        |        |       |       |       |

PHI

|         |        |        |        |        |        |        |        |
|---------|--------|--------|--------|--------|--------|--------|--------|
| .000    | -.0202 | -.0599 | -.1227 | -.1991 | -.1457 | -.1563 | -.0006 |
| 40.000  | -.0764 | -.1069 | -.1883 | -.1110 | -.1570 | -.0710 | .3182  |
| 70.000  | -.0998 | -.1932 | -.0016 | .1457  | -.1392 | -.3343 | .2668  |
| 90.000  | -.0575 | -.1196 | .0748  | .1775  | -.1884 | -.2855 |        |
| 100.000 |        | .1459  | .2236  | -.2846 | -.3018 | -.2008 |        |
| 110.000 |        |        | .2574  | .2975  | -.3374 | -.2385 | -.4172 |
| 120.000 | -.0446 | -.0233 | .3220  | .3733  | -.2299 | -.0908 | -.2731 |
| 130.000 |        |        | .3209  | .3168  | -.1285 | -.0226 |        |
| 140.000 | .0029  | .0804  | .3297  | .1081  | -.0102 | -.3386 |        |
| 150.000 | .0105  | .2977  |        |        |        |        |        |
| 160.000 | .0280  | .0914  | .2919  | .4169  |        |        |        |

ALPHA ( 2 ) = .055 BETA ( 2 ) = .182 MACH = .89853 Q = 598.47 P = 1059.0 RAYL = 3.5741

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB     | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580 | .1660  | .1770 | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|----------|--------|-------|--------|--------|--------|--------|-------|--------|-------|--------|--------|--------|--------|-------|-------|
| PHI      |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 150.000  | 1.2123 | .5221 | .0797  | .0046  | -.0788 | -.1478 |       | -.1510 |       | -.1636 | -.1728 | -.0649 | -.0047 | .0335 | .0369 |
| 40.000   |        | .0995 | -.0055 | -.0112 | -.0710 | -.1114 |       | -.1642 |       | -.1759 | -.2109 | -.2673 | -.0555 | .0003 | .0197 |
| 70.000   |        | .2327 | .0112  | .1143  | .0320  | -.0278 |       | -.1855 |       | -.2353 | -.2353 | -.7241 | -.0749 | .0125 | .0422 |
| 90.000   |        | .3307 | .1143  | .1446  | .0405  | .0177  |       | -.1389 |       | -.2169 | -.3772 | .7110  | -.0948 | .0126 | .0429 |
| 100.000  |        | .5717 | .4146  | .1704  | .0835  | .0551  |       | -.1148 |       | -.4076 | -.6836 | -.1990 | .0138  | .0280 | .0280 |
| 120.000  |        |       | .4848  | .3062  | .1937  | .2163  |       | .0932  |       | -.4895 | -.9484 | -.1410 | .0252  | .0229 |       |
| 140.000  |        |       | .4923  | .7690  | .2721  | .3111  |       | -.5484 |       | -.8283 | -.9484 | -.1410 | .0252  | .0229 |       |
| 160.000  |        |       |        |        |        |        |       |        |       | .2076  |        |        |        |       |       |
| 180.000  |        |       |        |        |        |        |       |        | .2712 |        |        |        |        |       |       |
| 200.000  |        |       |        |        |        |        |       |        |       | -.9190 | -.8605 | -.0584 | .0219  | .0258 |       |
| 220.000  |        |       |        |        |        |        |       |        |       | -.9396 | -.8540 | -.0347 | .0221  | .0279 |       |
| 240.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 260.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 280.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 300.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 320.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 340.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 360.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 380.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 400.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 420.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 440.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 460.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 480.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 500.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 520.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 540.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 560.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 580.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 600.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 620.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 640.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 660.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 680.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 700.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 720.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 740.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 760.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 780.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 800.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 820.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 840.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 860.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 880.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 900.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 920.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 940.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 960.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 980.000  |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |
| 1000.000 |        |       |        |        |        |        |       |        |       |        |        |        |        |       |       |

PHI

|         |        |        |        |        |        |        |        |
|---------|--------|--------|--------|--------|--------|--------|--------|
| .000    | -.0202 | -.0599 | -.1227 | -.1991 | -.1457 | -.1563 | -.0006 |
| 40.000  | -.0764 | -.1069 | -.1883 | -.1110 | -.1570 | -.0710 | .3182  |
| 70.000  | -.0998 | -.1932 | -.0016 | .1457  | -.1392 | -.3343 | .2668  |
| 90.000  | -.0575 | -.1196 | .0748  | .1775  | -.1884 | -.2855 |        |
| 100.000 |        | .1459  | .2236  | -.2846 | -.3018 | -.2008 |        |
| 110.000 |        |        | .2574  | .2975  | -.3374 | -.2385 | -.4172 |
| 120.000 | -.0446 | -.0233 | .3220  | .3733  | -.2299 | -.0908 | -.2731 |
| 130.000 |        |        | .3209  | .3168  | -.1285 | -.0226 |        |
| 140.000 | .0029  | .0804  | .3297  | .1081  | -.0102 | -.3386 |        |
| 150.000 | .0105  | .2977  |        |        |        |        |        |
| 160.000 | .0280  | .0914  | .2919  | .4169  |        |        |        |

PHI

|         |        |        |        |        |        |        |        |
|---------|--------|--------|--------|--------|--------|--------|--------|
| .000    | -.0202 | -.0599 | -.1227 | -.1991 | -.1457 | -.1563 | -.0006 |
| 40.000  | -.0764 | -.1069 | -.1883 | -.1110 | -.1570 | -.0710 | .3182  |
| 70.000  | -.0998 | -.1932 | -.0016 | .1457  | -.1392 | -.3343 | .2668  |
| 90.000  | -.0575 | -.1196 | .0748  | .1775  | -.1884 | -.2855 |        |
| 100.000 |        | .1459  | .2236  | -.2846 | -.3018 | -.2008 |        |
| 110.000 |        |        | .2574  | .2975  | -.3374 | -.2385 | -.4172 |
| 120.000 | -.0446 | -.0233 | .3220  | .3733  | -.2299 | -.0908 | -.2731 |
| 130.000 |        |        | .3209  | .3168  | -.1285 | -.0226 |        |
| 140.000 | .0029  | .0804  | .3297  | .1081  | -.0102 | -.3386 |        |
| 150.000 | .0105  | .2977  |        |        |        |        |        |
| 160.000 | .0280  | .0914  | .2919  | .4169  |        |        |        |

PHI

|         |        |        |        |        |        |        |        |
|---------|--------|--------|--------|--------|--------|--------|--------|
| .000    | -.0202 | -.0599 | -.1227 | -.1991 | -.1457 | -.1563 | -.0006 |
| 40.000  | -.0764 | -.1069 | -.1883 | -.1110 | -.1570 | -.0710 | .3182  |
| 70.000  | -.0998 | -.1932 | -.0016 | .1457  | -.1392 | -.3343 | .2668  |
| 90.000  | -.0575 | -.1196 | .0748  | .1775  | -.1884 | -.2855 |        |
| 100.000 |        | .1459  | .2236  | -.2846 | -.3018 | -.2008 |        |
| 110.000 |        |        | .2574  | .2975  | -.3374 | -.2385 | -.4172 |
| 120.000 | -.0446 | -.0233 | .3220  | .3733  | -.2299 | -.0908 | -.2731 |
| 130.000 |        |        | .3209  | .3168  | -.1285 | -.0226 |        |
| 140.000 | .0029  | .0804  | .3297  | .1081  | -.0102 | -.3386 |        |
| 150.000 | .0105  | .2977  |        |        |        |        |        |
| 160.000 | .0280  | .0914  | .2919  | .4169  |        |        |        |

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## TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB8911)

ALPHA ( 2 ) = .055 BETA ( 2 ) = .182

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7230  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| Phi     |        |        |        |       |        |        |        |        |        |        |
| 70.000  | -.1034 | -.1938 | -.0355 | .0854 | -.2298 | -.3609 | -.1843 |        |        |        |
| 90.000  | -.0599 | -.1153 | .0432  | .1050 | -.2952 | -.3127 | -.2102 |        |        |        |
| 105.000 |        |        | .1112  | .1349 | -.4175 | -.3140 | -.2506 |        |        |        |
| 110.000 |        |        |        |       |        |        |        | -.4111 |        |        |
| 120.000 | -.0170 | .0045  | .1847  | .2508 | -.4623 | -.3119 | -.3132 | -.3182 |        |        |
| 135.000 |        |        | .2599  | .4087 | -.3258 | -.1684 | -.1597 |        |        |        |
| 150.000 | .0218  | .0772  | .2817  | .4684 | -.2212 | -.1094 | -.0479 |        |        |        |
| 165.000 | .0213  |        | .2937  |       | -.0331 | -.1131 | -.3405 |        |        |        |
| 190.000 | .0199  | .0921  | .2871  | .4823 |        |        |        |        |        |        |

ALPHA ( 2 ) = .070 BETA ( 3 ) = .4253 MACH = .89853 Q = 598.47 P = 1059.0 RN/L = 3.5741

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580 | .1660  | .1770   | .2040  | .2510  | .3010  | .3780 | .4970 | .5740 |
|---------|--------|-------|--------|--------|--------|--------|-------|--------|---------|--------|--------|--------|-------|-------|-------|
| Phi     |        |       |        |        |        |        |       |        |         |        |        |        |       |       |       |
| .000    | 1.1937 | .5005 | .0637  | -.0030 | -.0934 |        |       | -.1566 | -.1739  | -.1680 | -.0655 | -.0172 | .0313 | .0306 |       |
| 20.000  |        | .0051 | -.0264 | -.0264 | -.1214 | -.1380 |       | -.1694 | -.1874  |        |        |        |       |       |       |
| 40.000  |        | .1565 | -.0160 | -.0160 | -.1023 | -.1131 |       | -.1751 | -.2078  | -.2622 | -.0482 | .0024  | .0232 | .0635 |       |
| 55.000  |        | .2223 | .0303  | .0303  | -.0396 | -.0767 |       | -.2698 | -.2698  |        |        |        |       |       |       |
| 70.000  |        | .2649 | .0511  | .0511  | -.0212 | -.0386 |       | -.1777 | -.3243  | -.7789 | -.0908 | .0097  | .0384 | .0384 |       |
| 90.000  | .4083  | .3103 | .0864  | -.0146 | -.0273 | -.0273 |       | -.1812 | -.4973  | -.7843 | -.1401 | .0199  | .0199 | .0384 |       |
| 120.000 |        | .3787 | .2024  | .0925  | .1304  |        |       | -.0199 | -.5648  | -.7826 | -.1997 | .0112  | .0247 |       |       |
| 140.000 |        | .4275 | .3204  | .2201  | .2558  |        |       | .4552  | -.7602  | -.9697 | -.1034 | .0147  | .0091 |       |       |
| 150.000 |        |       |        |        |        |        |       | .0943  | -.9226  |        |        |        |       |       |       |
| 162.000 |        |       |        |        |        |        |       | .1820  |         |        |        |        |       |       |       |
| 165.000 |        |       |        |        |        |        |       |        | -.8795  | -.8653 | -.0615 | .0116  | .0029 |       |       |
| 169.000 |        |       |        |        |        |        |       |        |         |        |        |        |       |       |       |
| 174.000 |        |       |        |        |        |        |       |        |         |        |        |        |       |       |       |
| 180.000 | 1.1937 | .6762 | .4716  | .3558  | .2875  | .3352  | .7121 | .5923  | -1.0571 | -.8693 | -.0584 | .0128  | .0079 |       |       |

| X/LB | .6520 | .7230 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|

|         |        |        |        |        |        |        |        |        |        |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|
| Phi     |        |        |        |        |        |        |        |        |        |  |
| .000    | -.0216 | -.0612 | -.1217 | -.2124 | -.1502 | -.1649 | -.0040 |        |        |  |
| 40.000  | -.0322 | -.1123 | -.1970 | -.1970 | -.1257 | -.1552 | -.0702 | .3154  | .0998  |  |
| 70.000  | -.1120 | -.1781 | -.0586 | .0333  | -.3036 | -.4041 | -.2108 | .2048  | -.0077 |  |
| 90.000  | -.0614 | -.1097 | .0091  | .0419  | -.3852 | -.3866 | -.2344 |        |        |  |
| 105.000 |        |        | .0733  | .0508  | -.5092 | -.4283 | -.2676 |        |        |  |
| 110.000 |        |        |        |        |        |        |        | -.4119 |        |  |
| 120.000 | -.0167 | -.0139 | .1263  | .0995  | -.6246 | -.4353 | -.3535 | -.3700 |        |  |
| 135.000 |        | .2254  | .3445  | .5021  | -.5021 | -.2759 | -.1999 |        |        |  |
| 150.000 | .0115  | .0650  | .2526  | .4299  | -.3646 | -.2481 | -.0968 |        |        |  |

(14883X)

ALPHA ( 2 ) = .070 BETA ( 3 ) = 4.253

## SECTION 11 ORBITER FUSelage

| SECTION ( ) ORBITER FUS FLAGE | DEPENDENT VARIABLE                  | NO                |
|-------------------------------|-------------------------------------|-------------------|
| X/LB                          | .6520 .7297 .7790 .8210 .8790 .9210 | 10 20 30 40 50 60 |

# III

|         |       |       |       |
|---------|-------|-------|-------|
| 165.000 | .0129 | .2603 | -.19  |
| 180.000 | .0020 | .2929 | .4241 |
|         |       | .0879 |       |

|               |       |              |        |     |   |   |   |        |   |   |        |      |   |        |
|---------------|-------|--------------|--------|-----|---|---|---|--------|---|---|--------|------|---|--------|
| ALPHA ( 3 ) = | 3.947 | BETA ( 1 ) = | -3.868 | MAU | . | Q | = | 598.51 | P | = | 1059.5 | RN/L | = | 3.5718 |
|---------------|-------|--------------|--------|-----|---|---|---|--------|---|---|--------|------|---|--------|

## SECTION (1) ORBITER FUSELAGE

[illegible]

三

|         |       |       |       |       |        |        |        |        |        |        |
|---------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| 1.1947  | .6610 | .2190 | .1057 | .0138 | -.0892 | -.1015 | -.1259 | -.0071 | .0706  | .0920  |
| .000    |       | .2619 | .1126 | .0008 | -.1022 | -.1185 |        |        |        |        |
| 20.000  |       | .4170 | .1696 | .0663 | -.0022 | -.1360 | -.1656 | .0177  | .0645  | .1133  |
| 40.000  |       | .4966 | .1827 | .1823 | .0932  | -.1091 |        |        |        |        |
| 55.000  |       | .5148 | .1966 | .1362 | .0049  | -.1304 | -.5747 | -.1478 | .0267  | .0295  |
| 70.000  |       | .5241 | .1949 | .1629 | .0242  | -.2063 | -.6192 | -.2083 | .0329  | .0205  |
| 120.000 | .6848 | .4980 | .3163 | .1949 | .0242  | -.2577 | -.6178 | -.3142 | -.0830 | -.0580 |
| 140.000 |       |       | .3305 | .2197 | .2046  | -.3530 |        |        |        |        |
| 150.000 |       |       | .2931 | .2074 | .6022  | -.4522 | -.9136 | -.4201 | .0066  | -.0166 |
| 151.000 |       | .4158 |       | .2733 |        |        |        |        |        |        |
| 152.000 |       |       |       |       | .2775  |        |        |        |        |        |

B1/X

|       |       |       |       |       |       |       |        |        |
|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| .6520 | .7290 | .7790 | .8210 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |
|-------|-------|-------|-------|-------|-------|-------|--------|--------|

**Ph**

[illegible]

(14883X)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 3 ) = 4.018    BETA ( 2 ) = 1.184    MACH = .89830    Q = 598.51    P = 1059.5    RN/L = 3.5778

## SECTION ( ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580  | .1660  | .1770    | .2040    | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|--------|--------|--------|--------|----------|----------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |        |        |        |        |          |          |        |        |        |        |       |
| 20.000  | 1.2007 | .6679 | .2226 | .1112 | .0171  | -.0614 | -.0825 | -.0825 | -.0990   | -.1212   | -.0521 | -.0521 | .0119  | .0771  | .0935 |
| 40.000  |        |       | .2404 | .1055 | -.0054 | -.0115 | -.0932 | -.0932 | -.1163   | -.1314   | -.0424 | -.0424 | .0244  | .0679  | .1192 |
| 55.000  |        |       | .3453 | .1352 | .0362  | .0307  | -.0844 | -.0709 | -.1591   | -.1789   |        |        |        |        |       |
| 70.000  |        |       | .3919 | .1653 | .0962  | .0593  | -.0683 | -.0575 | -.1974   | -.6549   | -.1428 | -.1428 | -.0325 | .0154  |       |
| 90.000  |        | .5362 | .3983 | .1875 | .0910  | .0803  | -.0683 | -.0575 | -.3064   | -.7150   | -.1775 | -.1775 | -.0207 | .0107  |       |
| 120.000 |        |       | .4136 | .2031 | .0925  | .1969  | .1167  | .1167  | -.3839   | -.6757   | -.2798 | -.2798 | -.0179 | -.0083 |       |
| 140.000 |        |       | .4170 | .2546 | .1461  |        |        |        | -.5064   |          |        |        |        |        |       |
| 150.000 |        |       | .3829 | .2775 | .1858  | .2486  | .5191  | .5191  | -.8810   | -.1.0276 | -.3792 | -.3792 | .0452  | .0070  |       |
| 162.000 |        |       |       |       |        |        |        |        | .1887    |          |        |        |        |        |       |
| 165.000 |        |       |       |       |        |        |        |        | .2385    |          |        |        |        |        |       |
| 174.000 |        |       |       |       |        |        |        |        |          | -.9751   | -.9368 | -.2233 | .0426  | .0117  |       |
| 180.000 | 1.2007 | .5639 | .3583 | .2747 | .2059  | .2763  | .7226  | .5790  | -.1.0143 | -.9169   | -.1721 | -.1721 | .0391  | .0084  |       |

# III

|         |        |        |        |        |         |        |        |        |       |
|---------|--------|--------|--------|--------|---------|--------|--------|--------|-------|
| 0.000   | -.0694 | .0280  | -.0369 | -.1284 | -.1102  | -.1471 | .0101  | .3618  | .1156 |
| 40.000  | .0571  |        | -.0178 | -.1036 | -.10861 | -.1152 | -.0478 | .2582  | .0225 |
| 70.000  | -.2238 | -.4293 | -.1182 | .0452  | -.2646  | -.3239 | -.1735 |        |       |
| 90.000  | -.1702 | -.3219 | -.0295 | .0530  | -.3455  | -.2782 | -.1807 |        |       |
| 105.000 |        |        | .0571  | .0637  | -.4499  | -.2590 | -.2187 |        |       |
| 110.000 |        |        |        |        |         |        |        | -.3964 |       |
| 120.000 | -.1157 | -.1237 | .1181  | .1864  | -.5274  | -.2869 | -.2490 | -.2925 |       |
| 135.000 |        |        | .1778  | .3937  | -.4063  | -.1912 | -.1589 |        |       |
| 150.000 | -.0570 | -.0157 | .1974  | .4704  | -.2843  | -.1514 | -.0786 |        |       |
| 165.000 | -.0473 |        | .2098  |        | -.0997  | -.1575 | -.3237 |        |       |
| 180.000 | -.0465 | .0118  | .2168  | .4282  |         |        |        |        |       |

ALPHA ( 3 ) = 4.018    BETA ( 3 ) = 4.245    MACH = .89830    Q = 598.51    P = 1059.5    RW/L = 3.5778

## SECTION 11 ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970 | .5740 |
|---------|--------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| PHI     |        |       |       |       |        |        |        |        |        |        |        |        |       |       |
| .000    | 1.1851 | .6547 | .2128 | .1050 | .0045  |        |        |        |        |        |        |        |       |       |
| 20.000  |        |       | .2059 | .0790 | -.0238 | -.0612 | -.0902 | -.1120 | -.1259 | -.1165 | -.0565 | .0160  | .0718 | .0857 |
| 40.000  |        |       | .2592 | .0821 | -.0011 | -.0400 | -.1003 | -.1259 | -.1427 | -.2006 | -.0938 | .0132  | .0557 | .1163 |
| 55.000  |        |       | .2743 | .0851 | .0145  | .0273  | -.1209 | -.1934 | -.1934 |        |        |        |       |       |
| 70.000  |        |       | .2774 | .0818 | .0030  | .1313  | -.1203 | -.2343 | -.2343 | -.7125 | -.1342 | -.0277 | .0085 |       |
| 90.000  |        | .3789 | .2375 | .0248 | .0015  | .0042  | -.1265 | -.4049 | -.4049 | -.7862 | -.1635 | -.0090 | .0123 |       |
| 120.000 |        |       | .3657 | .1639 | .0610  | .1315  | .0158  | -.5150 | -.5150 | -.7722 | -.0184 | .0069  | .0069 |       |



DATE 10 FEB 76 TABULATED PRESSURE DATA - OA148 ( AMES 11-073-1 )

(XE6641)

AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 7.919 BETA ( 1 ) = -3.861

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

180.000 1.1606 .4217 .2176 .1713 .1063 .2024 .4966 -.9463 -.6417 -.4778 -.0643 .0002

X/LB

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .1527 .1079 .0376 -.0499 -.0690 -.1227 .0132 .4056 .1321

40.000 .1589 .0601 .0267 -.0437 -.0515 -.0515 .3101 .0520

70.000 .3052 .5638 .2247 .0625 .1563 .3694 .1595

90.000 .2463 .4890 .1037 .0491 .1909 .3117 .2126

105.000 .0497 .0578 .2622 .3225 .2178

110.000 .3065 .2691 .1036 .0394 .3570 .2699 .1913

120.000 .1493 .1162 .1053 .2632 .2491 .1013 .0871

135.000 .1290 .1020 .1075 .3066

150.000 .1132 .0757 .1075 .3066

ALPHA ( 4 ) = 7.925 BETA ( 2 ) = .181 MACH = .89927 Q = 599.06 P = 1059.3 RN/L = 3.5789

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

180.000 1.1667 .8089 .3656 .2317 .1201 .0322 .0034 -.0184 -.0485 -.0068 .0575 .1312 .1577

20.000 .3841 .2235 .1034 .1372 .0747 .0018 -.0390 -.0499 -.1020 -.0155 .0544 .1118 .1856

40.000 .4440 .2438 .1334 .0623 .2337 .0320 .1086 .1086 .1959 .1959 .0839 .0163

55.000 .4326 .2337 .1334 .0623 .2337 .0320 .1086 .1086 .1959 .1959 .0839 .0163

70.000 .3562 .2001 .0960 .0763 .0348 .0211 .2344 .6864 .2160 .0794 .0159

90.000 .3808 .1883 .0948 .0917 .0211 .1378 .3565 .7089 .3268 .1077 .0553

120.000 .3353 .1852 .0955 .1718 .1378 .5025 .4971 .3565 .7089 .3268 .1077 .0553

140.000 .2741 .1880 .1010 .1943 .5025 .1742 .8350 .6341 .4632 .0489 .0080

150.000 .2741 .1880 .1010 .1943 .5025 .1742 .8350 .6341 .4632 .0489 .0080

162.000 .2741 .1880 .1010 .1943 .5025 .1742 .8350 .6341 .4632 .0489 .0080

165.000 .2741 .1880 .1010 .1943 .5025 .1742 .8350 .6341 .4632 .0489 .0080

169.000 .2741 .1880 .1010 .1943 .5025 .1742 .8350 .6341 .4632 .0489 .0080

174.000 .2741 .1880 .1010 .1943 .5025 .1742 .8350 .6341 .4632 .0489 .0080

180.000 1.1667 .4101 .2395 .1731 .1145 .2141 .5352 .1.1396 .6978 .3365 .0116 .0116

PHI

180.000 .1520 .1163 .0442 .0528 .0705 .1275 .0195 .4018 .1298

40.000 .1593 .0613 .0238 .0569 .1353 .0386 .2843 .0274

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB841)

ALPHA ( 4 ) = 7.925 BETA ( 2 ) = .181

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| 70.000  | -.3056 | -.6179 | -.3027 | -.0075 | -.2228 | -.4100 | -.2436 |        |        |        |
| 90.000  | -.2479 | -.4648 | -.1680 | -.0053 | -.3057 | -.3587 | -.3506 |        |        |        |
| 105.000 |        |        | -.0300 | -.0127 | -.3927 | -.3718 | -.4612 |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.4072 |        |        |
| 120.000 | -.2069 | -.2332 | .0072  | .0337  | -.5019 | -.3511 | -.3361 | -.2847 |        |        |
| 135.000 |        |        | .0858  | .3020  | -.4104 | -.2253 | -.2121 |        |        |        |
| 150.000 | -.1205 | -.1240 | .1173  | .4177  | -.3154 | -.1978 | -.1158 |        |        |        |
| 165.000 | -.1103 |        | .1277  |        | -.1248 | -.1839 | -.3224 |        |        |        |
| 180.000 | -.1070 | -.0685 | .1417  | .3866  |        |        |        |        |        |        |

ALPHA ( 4 ) = 7.977 BETA ( 3 ) = 4.247 MACH = .89927 Q = 599.06 P = 1058.3 RN/L = 3.5789

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120  | .1580 | .1660  | .1770   | .2040   | .2510  | .3010  | .3780  | .4570 | .5740 |
|---------|--------|-------|-------|-------|-------|--------|-------|--------|---------|---------|--------|--------|--------|-------|-------|
| PHI     |        |       |       |       |       |        |       |        |         |         |        |        |        |       |       |
| 20.000  | 1.1511 | .7901 | .3505 | .2170 | .1047 |        |       | -.0112 | -.0322  | -.0507  | -.0172 | .0527  | .1260  | .1514 |       |
| 40.000  |        |       | .3361 | .1863 | .0709 | .0156  |       | -.0306 | -.0559  | -.0921  | -.1503 | .0239  | .0846  | .1722 |       |
| 55.000  |        |       | .3411 | .1740 | .0785 | .0203  |       | -.0362 | -.0590  | -.0954  | -.1590 | .0239  | .0846  | .1722 |       |
| 70.000  |        |       | .3008 | .1213 | .0357 | -.0136 |       | -.0954 | -.1590  | -.0954  | -.1590 | .0239  | .0846  | .1722 |       |
| 90.000  |        | .3288 | .2696 | .0887 | .0002 | .0134  |       | -.0654 | -.1208  | -.0854  | -.1747 | -.0993 | -.0319 |       |       |
| 120.000 |        |       | .2677 | .0835 | .0019 | .0271  |       | -.0885 | -.3332  | -.7613  | -.1775 | -.0768 | -.0215 |       |       |
| 140.000 |        |       | .2611 | .1170 | .0274 | .1170  |       | .0550  | -.4674  | -.7485  | -.2879 | -.0735 | -.0111 |       |       |
| 160.000 |        |       | .2353 | .1567 | .0674 | .1642  |       | .4163  | -.10185 | -.6536  | -.4233 | -.0487 | .0069  |       |       |
| 180.000 |        |       |       |       |       |        |       | .0775  | .1269   | -.10393 | -.7031 | -.4613 | -.0428 | .0116 |       |
| PHI     |        |       |       |       |       |        |       |        |         |         |        |        |        |       |       |
| 20.000  | 1.1511 | .3813 | .2370 | .1449 | .1024 | .2049  | .6270 | .5180  | -.10393 | -.7031  | -.4613 | -.0428 | .0116  |       |       |
| 40.000  |        |       | .2370 | .1449 | .1024 | .2049  | .6270 | .5180  | -.10393 | -.7031  | -.4613 | -.0428 | .0116  |       |       |
| 55.000  |        |       | .2370 | .1449 | .1024 | .2049  | .6270 | .5180  | -.10393 | -.7031  | -.4613 | -.0428 | .0116  |       |       |
| 70.000  |        |       | .2370 | .1449 | .1024 | .2049  | .6270 | .5180  | -.10393 | -.7031  | -.4613 | -.0428 | .0116  |       |       |
| 90.000  |        |       | .2370 | .1449 | .1024 | .2049  | .6270 | .5180  | -.10393 | -.7031  | -.4613 | -.0428 | .0116  |       |       |
| 120.000 |        |       | .2370 | .1449 | .1024 | .2049  | .6270 | .5180  | -.10393 | -.7031  | -.4613 | -.0428 | .0116  |       |       |
| 140.000 |        |       | .2370 | .1449 | .1024 | .2049  | .6270 | .5180  | -.10393 | -.7031  | -.4613 | -.0428 | .0116  |       |       |
| 160.000 |        |       | .2370 | .1449 | .1024 | .2049  | .6270 | .5180  | -.10393 | -.7031  | -.4613 | -.0428 | .0116  |       |       |
| 180.000 |        |       | .2370 | .1449 | .1024 | .2049  | .6270 | .5180  | -.10393 | -.7031  | -.4613 | -.0428 | .0116  |       |       |

X/LB

PHI

20.000

40.000

55.000

70.000

90.000

105.000

120.000

135.000

150.000

165.000

180.000

PHI

20.000

40.000

55.000

70.000

90.000

105.000

120.000

135.000

150.000

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8841)

ALPHA ( 4 ) = 7.877 BETA ( 3 ) = 4.247

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 -.1008 .0983  
180.000 -.1160 -.0788 .1068 .3158 - .2182 -.3138 -.3274

ALPHA ( 5 ) = 11.893 BETA ( 1 ) = -3.850 MACH = .99863 Q = 588.63 P = 1059.0 RV/L = 3.5769

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.0982 .9236 .5012 .3417 .2261 .1395 .0747 .0564 .0349 .0553 .1033 .1890 .2261  
.0000 .5490 .6206 .4031 .2864 .2327 .1956 .0858 .0536 .0200 .0716 .1234 .1902 .2708  
55.000 .5688 .3659 .2547 .1566 .1190 .0605 .0148  
70.000 .4926 .3021 .1861 .1531 .0543  
90.000 .2535 .1613 .1434 .0953  
120.000 .2535 .1613 .1434 .0953  
140.000 .2596 .1504 .0611 .1419 .1860  
150.000 .1676 .0827 .0131 .1452 .5590  
162.000  
165.000  
169.000  
174.000  
180.000

X/LB

1.0982 .2561 .0972 .0749 .0278 .1490 .6522 .4550 .9990 1.0180 1.0460  
.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 .2277 .1880 .1158 .0164 .0259 -.1158 .0023  
40.000 .2540 .1492 .1492 .0511 -.0132 -.1377 -.0306  
70.000 -.4406 -.7289 .2155 -.0415 .2647 -.4012 -.3088  
90.000 -.3440 -.5708 .1207 .0132 .2753 .3737 .4492  
100.000 .0261 .0605 .3357 .4223 .4775  
110.000  
120.000 .3734 .2923 .0011 .0384 .3725 .3611 .2951  
135.000 .2540 .1492 .1492 .0511 -.0132 -.1377 -.0306  
150.000 .2512 .2268 .0023 .1993 .3489 .2487 .2164  
165.000 .2046 .2046 .0164 .2932 .2390 .2041 .1744  
180.000 .1637 .1324 .0795 .3310 .0804 .1302 .3381

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB41)

ALPHA ( 5 ) = 11.848 BETA ( 2 ) = .191 MACH = .89863 Q = 598.63 P = 1059.0 RN/L = 3.5769

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|
| PHI     | .000   | .11065 | .9294 | .5076 | .3479 | .2306 | .1237 | .0803 | .0561  | .0348  | .0656 | .1160 | .1962 | .2285 |       |
| 20.000  |        |        |       | .5172 | .3378 | .2135 | .1237 | .0762 | .0346  |        |       |       |       |       |       |
| 40.000  |        |        |       | .5253 | .3310 | .2105 | .1405 | .0736 | .0084  |        |       |       |       |       |       |
| 55.000  |        |        |       | .4405 | .2395 | .1450 | .0578 | .0218 | .0880  |        |       |       |       |       | .2580 |
| 70.000  |        |        |       | .3688 | .1652 | .0852 | .0710 | .0152 | .1208  |        |       |       |       |       |       |
| 90.000  |        | .4163  |       | .3217 | .1561 | .0634 | .0713 | .0029 | .2110  |        |       |       |       |       |       |
| 120.000 |        |        |       | .2398 | .1048 | .0202 | .1259 | .1386 | .3420  |        |       |       |       |       |       |
| 140.000 |        |        |       |       |       |       |       |       | .4877  |        |       |       |       |       |       |
| 150.000 |        |        |       | .1551 | .0975 | .0106 | .1455 | .4817 | .7045  |        |       |       |       |       |       |
| 162.000 |        |        |       |       |       |       |       |       | .1620  |        |       |       |       |       |       |
| 165.000 |        |        |       |       |       |       |       |       | .1802  |        |       |       |       |       |       |
| 169.000 |        |        |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 174.000 |        |        |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 180.000 | 1.1055 | .2436  | .1166 | .0748 | .0276 | .1611 | .6086 | .5123 | .3385  |        |       |       |       |       |       |
| X/LB    | .6520  | .7290  | .7790 | .8210 | .8790 | .9210 | .90   | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |

PHI

.000

.2351

.1934

.1211

.0191

.0222

.1258

.0052

.0494

.0127

.1558

.0712

.4221

.6588

.5304

.4052

.4828

.5473

.3391

.3022

.4266

.2896

.1370

.0129

ALPHA ( 5 ) = 11.881 BETA ( 3 ) = 4.259 MACH = .89863 Q = 598.63 P = 1059.0 RN/L = 3.5769

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     | .000  | 1.0913 | .9134 | .3406 | .2148 | .0978 | .0738 | .0498 | .0293 | .0502 | .1126 | .1936 | .2143 |       |       |
| 20.000  |       |        |       | .4990 | .2920 | .1819 | .0461 | .0109 |       |       |       |       |       |       |       |
| 40.000  |       |        |       | .4565 | .2920 | .1819 | .0208 | .0538 |       |       |       |       |       |       |       |
| 55.000  |       |        |       | .4097 | .2483 | .1529 | .0208 | .1128 |       |       |       |       |       |       |       |
| 70.000  |       |        |       | .3068 | .1264 | .0331 | .0411 | .1539 |       |       |       |       |       |       |       |
| 90.000  |       |        |       | .2472 | .0811 | .0174 | .0773 | .1794 |       |       |       |       |       |       |       |
| 120.000 |       | .2571  |       | .2129 | .0615 | .0134 | .0610 | .2818 |       |       |       |       |       |       |       |
| 140.000 |       |        |       | .1760 | .0494 | .0203 | .0811 | .4336 |       |       |       |       |       |       |       |
| 150.000 |       |        |       |       |       |       |       | .5811 |       |       |       |       |       |       |       |
| 162.000 |       |        |       |       |       |       |       | .3343 |       |       |       |       |       |       |       |
| 165.000 |       |        |       |       |       |       |       | .2050 |       |       |       |       |       |       |       |
| 169.000 |       |        |       |       |       |       |       | .1878 |       |       |       |       |       |       |       |
| 174.000 |       |        |       |       |       |       |       | .2215 |       |       |       |       |       |       |       |
| 180.000 |       |        |       |       |       |       |       | .4336 |       |       |       |       |       |       |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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ALPHA ( 5 ) = 11.881      BETA ( 3 ) = 4.259

(1483X)

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SECTION ( ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

[illegible]

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TABULATED PRESSURE DATA - 0A148 ( ANES 11-073-1 )

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ANES 11-073(0A148) - 140A/B/C/R ORB FUSELAGE

(XEBB42) ( 05 AUG 75 )

## REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO  
 LREF = 474.8000 IN. YMRP = .0000 IN. YO  
 BREF = 936.0500 IN. ZMRP = 375.0000 IN. ZO  
 SCALE = .0300

## PARAMETRIC DATA

PUDDER = 10.000 SPDBRK = 85.000  
 BDFLAP = 16.300 L-ELVN = 10.000  
 R-ELVN = 10.000 MACH = .600

ALPHA ( 1 ) = -4.049 BETA ( 1 ) = -7.852 MACH = .59622 Q = 593.85 P = 2386.3 RN/L = 4.8696

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230  | .0450  | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|--------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | .1340  | -.2140 | -.2103 | -.2251 | -.2805 |       | -.1788 | -.1466 | -.1257 | -.0935 | -.0695 | -.0531 | -.0632 |       |
| 20.000  |       | -.1975 | -.0266 | -.2251 | -.2817 | -.3092 |       | -.2368 | -.1986 |        |        |        |        |        |       |
| 40.000  |       |        | .2813  | .0607  | -.3014 | -.1167 |       | -.3637 | -.3288 | -.2665 | -.1888 | -.1604 | -.1352 | -.1344 |       |
| 55.000  |       |        | .4486  | .2374  | .1557  | .0907  |       | -.1406 | -.1605 |        |        |        |        |        |       |
| 70.000  |       | .7406  | .5486  | .3340  | .2359  | .1391  |       | -.1196 | -.1730 | -.1309 | .0005  | .0644  | .1011  |        |       |
| 90.000  |       |        | .6208  | .4620  | .3494  | .3291  |       | -.0065 | -.1419 | -.1572 | -.0396 | .0409  | .0864  |        |       |
| 120.000 |       |        | .5745  | .4299  | .3504  | .3488  |       | .1893  | -.1868 | -.1805 | -.1865 | .0041  | .0346  |        |       |
| 140.000 |       |        |        |        |        |        |       | .5654  | -.3518 | -.3156 | -.1015 | -.0374 | -.0052 |        |       |
| 150.000 |       |        |        |        |        |        |       | .2508  |        |        |        |        |        |        |       |
| 162.000 |       |        |        |        |        |        |       | .2588  |        |        |        |        |        |        |       |
| 165.000 |       |        |        |        |        |        |       |        | -.9336 | -.2395 | -.1243 | -.0555 | -.0207 |        |       |
| 169.000 |       |        |        |        |        |        |       | .5735  |        |        |        |        |        |        |       |
| 174.000 |       |        |        |        |        |        |       |        |        |        |        |        |        |        |       |
| 180.000 |       |        |        |        |        |        |       |        |        |        |        |        |        |        |       |

X/LB

PHI

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|
| PHI     | -.0900 | -.1045 | -.1255 | -.1662 | -.1235 | -.1238 | -.0241 |       | .2311  | -.0147 |
| 40.000  |        |        | -.1332 | -.1634 | -.1254 | -.1215 | -.0837 |       | .1657  | -.0005 |
| 70.000  |        | -.0278 | .0313  | .1212  | -.0917 | -.1237 | -.1530 |       |        |        |
| 90.000  |        | .0204  | .0930  | .1718  | -.1103 | -.1433 | -.1616 |       |        |        |
| 105.000 |        |        | .1413  | .2895  | -.1954 | -.1330 | -.2273 |       |        |        |
| 120.000 |        | .0224  | .2379  | .4711  | .1712  | -.1549 | -.2107 |       |        |        |
| 135.000 |        |        | .2859  | .4657  | .2839  | -.0423 | -.1348 |       |        |        |
| 150.000 |        | .0162  | .0645  | .3441  | -.0317 | .0286  | -.0484 |       |        |        |
| 165.000 |        | -.0002 | .2234  | .2035  | .0498  | -.2945 |        |       |        |        |
| 180.000 |        | -.0225 | .0393  | .1675  | .2957  |        |        |       |        |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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ALPHA ( 1 ) = -3.971 BETA ( 2 ) = -3.842 MACH = .59622 Q = 593.85 P = 2386.3 RN/L = 4.8696  
 AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (XEBB42)

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580 | .1660  | .1770   | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|--------|--------|--------|--------|-------|--------|---------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |        |        |        |        |       |        |         |        |        |        |        |        |       |
| 20.000  | 1.0535 | .1764 | -.1750 | -.1818 | -.2070 |        |       | -.1578 | -.1319  | -.1094 | -.0760 | -.0547 | -.0371 | -.0500 |       |
| 40.000  |        |       | -.1682 | -.1847 | -.2424 | -.2355 |       | -.2022 | -.1649  |        |        |        |        |        |       |
| 55.000  |        |       | .0169  | -.1890 | -.2528 | -.2599 |       | -.2935 | -.2638  | -.2010 | -.1313 | -.1062 | -.0969 | -.0951 |       |
| 70.000  |        |       | .2114  | .0079  | -.0621 | -.1341 |       | -.1740 | -.1963  |        |        |        |        |        |       |
| 90.000  |        | .6084 | .3435  | .1397  | .0563  | .0087  |       | -.1052 | -.1867  | -.1806 | -.0381 | .0338  | .0765  |        |       |
| 120.000 |        |       | .4346  | .2224  | .1292  | .0461  |       | -.0038 | -.2659  | -.2107 | -.0770 | .0103  | .0635  |        |       |
| 140.000 |        |       | .5295  | .3743  | .2563  | .2364  |       | .0805  | -.2398  | -.2304 | -.1942 | -.0082 | .0387  |        |       |
| 150.000 |        |       | .5380  | .4122  | .3278  | .3234  |       | .5037  | -.4053  | -.2734 | -.0888 | -.0222 | .0165  |        |       |
| 162.000 |        |       |        |        |        |        |       |        | .1617   |        |        |        |        |        |       |
| 165.000 |        |       |        |        |        |        |       |        | .1942   |        |        |        |        |        |       |
| 169.000 |        |       |        |        |        |        |       |        |         | -.9262 | -.2095 | -.1033 | -.0314 | .0098  |       |
| 174.000 |        |       |        |        |        |        | .6944 |        |         |        |        |        |        |        |       |
| 180.000 | 1.0536 | .7282 | .4774  | .3859  | .3097  | .3206  |       | .4603  | -1.1556 | -.1972 | -.1000 | -.0357 | -.0016 |        |       |
| X/LB    | .6520  | .7290 | .7790  | .8210  | .8790  | .9210  | .9600 | .9990  | 1.0180  | 1.0460 |        |        |        |        |       |

## PHI

|         |        |        |        |        |        |        |        |        |       |        |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--|--|--|--|--|
| 20.000  | -.0832 | -.0956 | -.1241 | -.1650 | -.1243 | -.1200 | -.0262 |        | .2386 | -.0123 |  |  |  |  |  |
| 40.000  | -.1528 | -.1255 | -.1255 | -.1506 | -.1211 | -.1065 | -.0592 |        | .1657 | -.0164 |  |  |  |  |  |
| 55.000  | -.5206 | -.0840 | -.0087 | .0731  | -.1371 | -.1559 | -.1729 |        |       |        |  |  |  |  |  |
| 70.000  | .6129  | -.0108 | .0564  | .1114  | -.1787 | -.1822 | -.1937 |        |       |        |  |  |  |  |  |
| 105.000 |        |        | .1122  | .1790  | -.2697 | -.2276 | -.2489 |        |       |        |  |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        | -.3564 |       |        |  |  |  |  |  |
| 120.000 | .0314  | .0698  | .2128  | .3217  | -.2661 | -.2286 | -.2704 | -.3076 |       |        |  |  |  |  |  |
| 155.000 |        |        | .2138  | .4235  | -.1475 | -.0904 | -.1087 |        |       |        |  |  |  |  |  |
| 160.000 | .0460  | .1081  | .2090  | .4422  | -.0660 | -.0277 | -.0750 |        |       |        |  |  |  |  |  |
| 165.000 | .0480  |        | .2572  |        | .1136  | -.0239 | -.3158 |        |       |        |  |  |  |  |  |
| 180.000 | .0245  | .0950  | .2325  | .4256  |        |        |        |        |       |        |  |  |  |  |  |

ALPHA ( 1 ) = -3.888 BETA ( 3 ) = .191 MACH = .59622 Q = 593.85 P = 2386.3 RN/L = 4.8696

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |        |        |        |        |       |        |        |        |        |        |        |        |       |
| 20.000  | 1.0615 | .1841 | -.1743 | -.1662 | -.1999 |        |       | -.1539 | -.1326 | -.1020 | -.0700 | -.0435 | -.0295 | -.0483 |       |
| 40.000  |        |       | -.1558 | -.1738 | -.2255 | -.2080 |       | -.1764 | -.1469 |        |        |        |        |        |       |
| 55.000  |        |       | -.0145 | -.1647 | -.2312 | -.2134 |       | -.2415 | -.2145 | -.1500 | -.0909 | -.0658 | -.0552 | -.0652 |       |
| 70.000  |        |       | .1264  | .0500  | -.1021 | -.1693 |       | -.1932 | -.2228 |        |        |        |        |        |       |
| 90.000  |        | .4510 | .2269  | .0354  | -.0281 | -.0670 |       | -.1715 | -.2439 | -.2150 | -.0677 | .0080  | .0567  |        |       |
| 120.000 |        |       | .3076  | .0971  | .0179  | -.0540 |       | -.1883 | -.3550 | -.2627 | -.1042 | -.0109 | .0440  |        |       |
| 140.000 |        |       | .4188  | .2554  | .1455  | .1451  |       | -.0454 | -.3451 | -.2831 | -.2417 | -.0347 | .0125  |        |       |



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TABULATED PRESSURE DATA - 0A148 (AVES 11-073-1)

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(XE6842)

ALPHA (1) = -3.983 BETA (4) = 4.273

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4570 .5740

PHI

180.000 1.0404 .6949 .4847 .3816 .3140 .220 .434 -1.1190 -.1934 -.0945 -.0356 .0017

X/LB

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.0000 -.0829 -.0957 -.1247 -.1616 -.1196 -.1196 -.0268  
40.000 -.1073 -.1152 -.1383 -.1207 -.1013 -.0528  
70.000 -.0527 -.1148 -.0875 -.0175 -.2243 -.2170 -.2233  
90.000 -.0207 -.0629 -.0271 -.0199 -.2802 -.2587 -.2513  
105.000 .0127 -.0139 -.4205 -.3178 -.3151

110.000

-.0213 -.0261 .0391 .0347 -.5076 -.4363 -.4379

120.000

.1626 .2923 -.3502 -.2457 -.2825

135.000

.0188 .0596 .2062 .4888 -.2375 -.1919 -.1623

150.000

.0247 .2141 -.0819 -.1850 -.3322

165.000

.0246 .0369 .2430 .4670

180.000

-.4214 -.4030

ALPHA (1) = -3.989 BETA (5) = 8.343 MACH = .59622 Q = 593.85 P = 2386.3 RN/L = 4.8696

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4570 .5740

PHI

.0000 .9932 .1337 .1896 -.2297 -.2066  
20.000 -.2017 -.1954 -.2358 -.2287 -.1927  
40.000 -.1222 -.2133 -.2287 -.1927  
55.000 -.0502 -.1698 -.1921 -.2101  
70.000 -.0043 -.1474 -.1890 -.1852  
90.000 .1036 .0509 -.1370 -.1900 -.2274  
120.000 .1573 .0023 .1104 .0904  
140.000 .2337 .2211 .1182 .1064  
150.000 .2337 .2211 .1182 .1064  
162.000 .3734  
165.000 .3933  
174.000 .3933  
180.000 .3933

X/LB

.6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.0000 -.0906 -.1029 -.1276 -.1689 -.1293 -.1218 -.0262  
40.000 -.0868 -.1657 -.1360 -.0969 -.0518

180.000

.2295 -.0120  
.1181 -.0988

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEBB-2)

ALPHA ( 1 ) = -3.999 BETA ( 5 ) = 8.343

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .6420  | .7290  | .7790  | .8210  | .8750  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| 70.000  | -.0739 | -.1474 | -.1267 | -.0597 | -.2626 | -.2366 | -.2259 |        |        |        |
| 90.000  | -.0440 | -.0977 | -.0937 | -.0696 | -.3184 | -.2841 | -.2719 |        |        |        |
| 105.000 |        |        | -.0423 | -.0520 | -.4743 | -.3537 | -.3335 |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.4099 |        |        |
| 120.000 | -.0548 | -.0895 | -.0604 | -.1837 | -.6667 | -.5425 | -.5146 | -.4295 |        |        |
| 135.000 |        |        | .0570  | .1325  | -.4956 | -.3530 | -.3558 |        |        |        |
| 150.000 | -.0357 | -.0165 | .0973  | .4389  | -.4024 | -.3123 | -.2340 |        |        |        |
| 165.000 | -.0352 |        | .1254  |        | -.2214 | -.2894 | -.3509 |        |        |        |
| 180.000 | -.0319 | .0399  | .1802  | .3659  |        |        |        |        |        |        |

ALPHA ( 2 ) = -.003 BETA ( 1 ) = -7.885 MACH = .59612 Q = 593.61 P = 2386.1 RN/L = 4.8734

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230  | .0460  | .0700  | .1120  | .1580 | .1660  | .1770  | .2040    | .2510  | .3010   | .3780  | .4870  | .5740 |
|---------|--------|-------|--------|--------|--------|--------|-------|--------|--------|----------|--------|---------|--------|--------|-------|
| PHI     |        |       |        |        |        |        |       |        |        |          |        |         |        |        |       |
| 20.000  | 1.0389 | .3239 | -.0612 | -.1116 | -.1371 | -.1918 |       | -.1345 | -.1132 | -.0970   | -.0692 | -.0450  | -.0159 | -.0119 |       |
| 25.000  |        |       | -.0193 | -.0914 | -.1737 | -.1615 |       | -.1726 | -.1493 | -.2013   | -.0890 | -.0695  | -.0529 | -.0426 |       |
| 40.000  |        |       | .2074  | -.0405 | -.1243 | .1615  |       | -.2237 | -.0873 |          |        |         |        |        |       |
| 55.000  |        |       | .3981  | .1959  | .1091  | .0243  |       | -.0425 | -.0923 | -.1328   | -.0183 | .0300   | .0343  |        |       |
| 70.000  |        |       | .5036  | .2987  | .2052  | .1328  |       | .0048  | -.1540 | -.1592   | -.0535 | .0088   | .0355  |        |       |
| 90.000  |        | .7383 | .5523  | .3555  | .2411  | .1668  |       | .0255  | -.1712 | -.2256   | -.2153 | -.0671  | -.0518 |        |       |
| 120.000 |        |       | .5540  | .3965  | .2877  | .2850  |       | .1740  | -.2654 |          |        |         |        |        |       |
| 140.000 |        |       |        |        |        |        |       |        | -.4585 | -.4043   | -.1551 | -.0833  | -.0585 |        |       |
| 150.000 |        |       | .4539  | .3172  | .2485  | .2670  |       | .5160  | .1878  |          |        |         |        |        |       |
| 162.000 |        |       |        |        |        |        |       |        | .1749  | -.1.1113 | -.2929 | -.1.634 | -.0949 | -.0542 |       |
| 165.000 |        |       |        |        |        |        |       |        |        |          |        |         |        |        |       |
| 169.000 |        |       |        |        |        |        |       |        |        |          |        |         |        |        |       |
| 174.000 |        |       |        |        |        |        |       |        |        |          |        |         |        |        |       |
| 180.000 | 1.0389 | .5766 | .3239  | .2485  | .1878  | .2104  | .6528 | .5155  |        |          |        |         |        |        |       |
| X/LB    | .6520  | .7290 | .7790  | .8210  | .8750  | .9210  | .9600 | .9990  | 1.0180 | 1.0460   |        |         |        |        |       |

## PHI

|         |        |        |        |        |        |        |        |        |       |       |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--|--|--|--|--|
| 20.000  | -.0325 | -.0504 | -.0861 | -.1325 | -.1077 | -.1130 | -.0154 |        |       |       |  |  |  |  |  |
| 40.000  | -.0525 | -.0840 | -.0840 | -.1219 | -.1004 | -.1013 | -.0678 |        |       |       |  |  |  |  |  |
| 70.000  | -.0311 | -.1093 | -.0181 | .1139  | -.0925 | -.1127 | -.1471 |        |       |       |  |  |  |  |  |
| 90.000  | -.0575 | -.0519 | .0579  | .1660  | -.1119 | -.1435 | -.1863 |        |       |       |  |  |  |  |  |
| 105.000 |        | .1035  | .3025  | .3025  | -.1807 | -.1781 | -.2231 |        |       |       |  |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        | -.3541 |       |       |  |  |  |  |  |
| 120.000 | -.0352 | -.0083 | .1880  | .4637  | .1884  | -.1545 | -.1904 | -.2768 |       |       |  |  |  |  |  |
| 135.000 |        | .2384  | .4080  | .4080  | -.1314 | -.0708 | -.1495 |        | .2692 | .0041 |  |  |  |  |  |
| 150.000 | -.0433 | .0278  | .2282  | .2516  | -.1020 | -.0130 | -.0717 |        | .1989 | .0231 |  |  |  |  |  |

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TABULATED PRESSURE DATA - 0A143 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE6642)

ALPHA ( 2 ) = -.003 BETA ( 1 ) = -7.885

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

155.000 -.0502 .1847 .1629 .0227 -.2910  
180.000 -.0580 .0047 .1421 .2535

ALPHA ( 2 ) = .104 BETA ( 2 ) = -3.860 MACH = .59612 Q = 593.61 P = 2386.1 RN/L = 4.8734

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

1.0736 .3607 -.0267 -.0761 -.1163 -.1626 -.1915  
20.000 -.0005 -.0647 -.1384 -.1120 -.12  
40.000 .1812 -.0343 .1249 .0512 -.019  
55.000 .3197 .1249 .0512 -.019  
70.000 .3989 .1943 .1025 .0552  
90.000 .6022 .4373 .2377 .1344 .1  
120.000 .4672 .3147 .2133 .2172  
140.000 .4305 .3069 .2337 .2521  
150.000  
151.000  
162.000  
165.000  
169.000  
174.000  
180.000-.1058 -.0776 -.0511 -.0234 .0011 -.0053  
-.1267 -.1060 -.0585 -.0412 -.0300 -.0131  
-.1352  
-.1575 -.1773 -.0618 .0035 .0258  
-.2372 -.2121 -.0877 -.0131 .0208  
-.2612 -.2631 -.2275 -.0466 -.0199  
-.3301  
-.5027 -.3499 -.1325 -.0578 -.0274  
.1026  
.1142

-1.0843 -.2610 -.1342 -.0580 -.0269

-1.3057 -.2345 -.1297 -.0628 -.0279

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

-.0257 -.0452 -.0789 -.1332 -.1060 -.1104 -.0115  
40.000 -.0632 -.0734 -.1193 -.1005 -.0985 -.0538  
70.000 -.1285 -.1483 -.0587 .0605 -.1413 -.1528 -.1690  
90.000 -.0782 -.0820 .0107 .0934 -.1753 -.1847 -.2036  
105.000 .0749 .1872 -.2605 -.2250 -.2553  
110.000  
120.000 .0061 .1816 .3199 -.2707 -.2249 -.2482  
135.000 .2440 .3753 -.1897 -.1176 -.1828  
150.000 -.0050 .0564 .3208 -.1335 -.0660 -.0968  
165.000 -.0036 .2174 .0697 -.0610 -.3113  
180.000 -.0163 .0589 .2030 .3518  
-.3598  
-.2955

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TABULATED PRESSURE DATA - 0A148 (ANES 11-073-1)

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ALTS 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8842)

ALPHA (2) = .114 BETA (3) = .190 MACH = .59612 Q = 593.61 P = 2386.1 RN/L = 4.8734

SECTION 1: NOBETTER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230 | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040    | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|--------|-------|--------|--------|--------|--------|--------|--------|----------|--------|--------|--------|--------|-------|
| PHI     | .000  | 1.0796 | .3696 | -.0254 | -.0697 | -.1189 |        | -.1155 | -.0978 | -.0785   | -.0491 | -.0243 | .0043  | -.0018 |       |
| 20.000  |       |        |       | -.0392 | -.0621 | -.1344 | -.1417 | -.1322 | -.1067 |          |        |        |        |        |       |
| 40.000  |       |        |       | .1251  | -.0505 | -.1123 | -.1200 | -.1531 | -.1411 | -.0912   | -.0399 | -.0214 | -.0124 | .0067  |       |
| 55.000  |       |        |       | .2262  | .0521  | -.0154 | -.0749 | -.1362 | -.1745 |          |        |        |        |        |       |
| 70.000  |       |        |       | .2727  | .0853  | -.0217 | -.0217 | -.1419 | -.2192 | -.2136   | -.0872 | -.0262 | .0069  |        |       |
| 90.000  |       | .4441  |       | .3132  | .1216  | .0350  | -.0146 | -.1504 | -.3208 | -.2543   | -.1121 | -.0314 | .0055  |        |       |
| 120.000 |       |        |       | .3756  | .2273  | .1214  | .1303  | -.0341 | -.3564 | -.2985   | -.2354 | -.0480 | -.0128 |        |       |
| 140.000 |       |        |       |        |        |        |        |        | -.4128 | -.3056   | -.1226 | -.0459 | -.0158 |        |       |
| 150.000 |       |        |       |        |        |        |        |        | -.5617 |          |        |        |        |        |       |
| 151.000 |       |        |       |        |        |        |        |        | -.0103 |          |        |        |        |        |       |
| 162.000 |       |        |       |        |        |        |        |        | .0260  |          |        |        |        |        |       |
| 165.000 |       |        |       |        |        |        |        |        |        | -.1.0753 | -.2395 | -.1205 | -.0433 | -.0113 |       |
| 169.000 |       |        |       |        |        |        |        |        |        |          |        |        |        |        |       |
| 174.000 |       |        |       |        |        |        |        |        |        |          |        |        |        |        |       |
| 180.000 |       |        |       |        |        |        |        |        |        |          |        |        |        |        |       |

X/LB .3520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

|         |        |        |        |        |        |        |        |        |        |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| .000    | -.0261 | -.0508 | -.0819 | -.1327 | -.1087 | -.1119 | -.0191 | .2518  | .0039  |
| 40.000  |        |        |        | -.0712 | -.1036 | -.0972 | -.0517 | .1584  | -.0705 |
| 70.000  |        |        |        | -.1546 | -.0957 | -.1901 | -.1972 |        |        |
| 90.000  |        |        |        | -.0976 | -.0990 | -.0205 | -.0233 |        |        |
| 105.000 |        |        |        |        | .0444  | .0578  | -.3432 | -.2726 | -.2789 |
| 110.000 |        |        |        |        |        |        |        |        |        |
| 120.000 |        |        |        |        |        |        |        |        |        |
| 130.000 |        |        |        |        |        |        |        |        |        |
| 150.000 |        |        |        |        |        |        |        |        |        |
| 160.000 |        |        |        |        |        |        |        |        |        |

-3884  
-3318

ALPHA (2) = .111 BETA (4) = .4251 MACH = .59612 Q = 593.61 P = 2386.1 RN/L = 4.8734

SECTION 1: NOBETTER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080  | .0230 | .0460  | .0700  | .1120  | .1580  | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     | .000  | 1.0558 | .3452 | -.0363 | -.0764 | -.1287 |        | -.1215 | -.1051 | -.0891 | -.0541 | -.0267 | -.0003 | -.0080 |       |
| 20.000  |       |        |       | -.0356 | -.0781 | -.1436 | -.1434 | -.1293 | -.1166 |        |        |        |        |        |       |
| 40.000  |       |        |       | .0497  | -.0812 | -.1318 | -.1267 | -.1438 | -.1429 | -.0929 | -.0373 | -.0146 | -.0124 | .0205  |       |
| 55.000  |       |        |       | .1138  | -.0307 | -.0774 | -.1136 | -.1746 | -.2069 |        |        |        |        |        |       |
| 70.000  |       |        |       | .1553  | -.0143 | -.0750 | -.0885 | -.1972 | -.2461 | -.2461 | -.1054 | -.0376 | -.0027 |        |       |
| 90.000  |       | .2774  |       | .1919  | .0382  | -.0553 | -.0584 | -.2228 | -.3893 | -.2858 | -.1291 | -.0404 | -.0033 |        |       |
| 120.000 |       |        |       | .2666  | .1186  | .0237  | .0345  | -.1504 | -.4417 | -.3337 | -.2588 | -.0568 | -.0156 |        |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11- 310A148) -140A/B/C/R ORB FUSELAGE

(XE8842)

ALPHA ( 2 ) = .111 BETA ( 4 ) = 4.251

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770  | .2040  | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|
| PHI     |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 140.000 |        |       | .3206 | .2327 | .459  | .1510 |       | .2639 |        |        |       |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 151.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 169.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |        |        |       |       |       |       |       |
| 180.000 | 1.0638 | .5589 | .3671 | .2693 | .2152 | .2407 | .5611 | .4208 |        |        |       |       |       |       |       |
| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210 | .9600 | .9990 | 1.0180 | 1.0460 |       |       |       |       |       |

PHI

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 | 1.0638 | .5589 | .3671 | .2693 | .2152 | .2407 | .5611 | .4208 |       |       |       |       |       |       |       |

ALPHA ( 2 ) = .040 BETA ( 5 ) = 8.310 MACH = .59612 Q = 593.61 P = 2386.1 RN/L = 4.8734

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 | 1.0638 | .5589 | .3671 | .2693 | .2152 | .2407 | .5611 | .4208 |       |       |       |       |       |       |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEB842)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 2 ) = .040 BETA ( 5 ) = 8.310

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

180.000 1.0097 .4902 .3208 .2226 .1689 .1928 .3226 -1.3117 -.2754 -.1666 -.1015 -.0720

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.000 -.0348 -.0514 -.0838 -.1399 -.1087 -.1178 -.0273  
40.000 -.0322 -.0694 -.1091 -.0973 -.0961 -.0502  
70.000 -.1664 -.2164 -.1697 -.0866 -.2667 -.2425 -.2327  
90.000 -.1158 -.1508 -.1102 -.0918 -.2344 -.3089 -.2934  
105.000 -.0626 -.0868 -.0682 -.3574 -.3386  
110.000  
120.000 -.0813 -.1007 -.0410 -.1982 -.6352 -.5060 -.4687  
135.000 .0537 .0533 -.0531 -.3581 -.3492  
150.000 -.0606 -.0353 .0817 .3739 -.4440 -.3438 -.2618  
165.000 -.0642 .1012  
180.000 -.0720 -.0017 .1462 .2968

-4199

-.3976

ALPHA ( 3 ) = 4.041 BETA ( 1 ) = -7.899 MACH = .59674 Q = 594.79 P = 2386.0 RN/L = 4.8833

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.0304 .4923 .0874 -.0051 -.0472  
20.000 .1509 .0347 -.0532 -.1022  
40.000 .3613 .1173 .0264 -.0257  
55.000 .4925 .2930 .2083 .1151  
70.000 .5209 .3447 .2300 .1544  
90.000 .6895 .5216 .3402 .2362 .1682  
120.000 .4567 .3120 .2099 .2181  
140.000 .3264 .2102 .1351 .1833  
150.000  
162.000  
165.000  
169.000  
174.000  
180.000

-.0838

-.0980

-.0911

.0308

.0339

.0384

.1410

.4670

.1275

.0912

.4471

.2335

.9990

1.0180

1.0460

.6067

.1357

.0948

.0772

-.0913

-.0763

-.0520

.2923

.2164

.0157

.0258

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ALPHA ( 3 ) = 4.041 BETA ( 1 ) = -7.899

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (XEBB42)

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210 | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |       |        |        |        |        |        |        |
| 70.000  | -.2207 | -.1835 | -.0598 | .1090 | -.0845 | -.0991 | -.1364 |        |        |        |
| 90.000  | -.1577 | -.1219 | .0135  | .1675 | -.0993 | -.1372 | -.1805 |        |        |        |
| 105.000 |        |        | .0596  | .3282 | -.1660 | -.1694 | -.2229 |        |        |        |
| 110.000 |        |        |        |       |        |        |        | -.3508 |        |        |
| 120.000 | -.2077 | -.1039 | .1239  | .4724 | -.2123 | -.1611 | -.1805 | -.2703 |        |        |
| 135.000 |        |        | .1866  | .3416 | -.1856 | -.1076 | -.1683 |        |        |        |
| 150.000 | -.1108 | -.0229 | .1878  | .1182 | -.1721 | -.0512 | -.0545 |        |        |        |
| 165.000 | -.0944 |        | .1490  | .1248 | -.0124 | -.2919 |        |        |        |        |
| 180.000 | -.0858 | -.3155 | .1199  | .1982 |        |        |        |        |        |        |

ALPHA ( 3 ) = 3.959 BETA ( 2 ) = -3.860 MACH = .56574 Q = 594.79 P = 2386.0 RV/L = 4.8833

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1580 | .1660  | .1770   | .2040   | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|---------|---------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |        |        |       |        |         |         |        |        |        |        |       |
| 20.000  | 1.0652 | .5281 | .1178 | .0337 | -.0251 |        |       | -.0679 | -.0550  | -.0709  | -.0465 | -.0207 | .0080  | .0393  | .0448 |
| 40.000  |        |       | .1569 | .0530 | -.0386 | -.0727 |       | -.0785 | -.0815  | -.0815  | -.0404 | .0087  | .0206  | .0255  | .0642 |
| 55.000  |        |       | .3147 | .0980 | .0177  | -.0204 |       | -.0786 | -.1005  | -.1005  |        |        |        |        |       |
| 70.000  |        |       | .3967 | .2166 | .1306  | .0441  |       | -.0300 | -.1493  | -.1493  | -.1913 | -.0832 | -.0422 | -.0249 |       |
| 90.000  |        | .5714 | .4150 | .2739 | .1356  | .0784  |       | -.0421 | -.2257  | -.2257  | -.2192 | -.1098 | -.0524 | -.0310 |       |
| 120.000 |        |       | .4199 | .2351 | .1432  | .0934  |       | -.0426 | -.2902  | -.2902  | -.3078 | -.2837 | -.1204 | -.1057 |       |
| 140.000 |        |       | .3911 | .2488 | .1572  | .1739  |       | .0706  | -.4005  | -.4005  | -.4162 | -.1726 | -.0847 | -.0624 |       |
| 150.000 |        |       | .3133 | .2078 | .1415  | .1739  |       | .4237  | .0478   | .0478   |        |        |        |        |       |
| 151.000 |        |       |       |       |        |        |       |        | .0432   |         |        |        |        |        |       |
| 162.000 |        |       |       |       |        |        |       |        |         | -.12546 | -.3022 | -.1617 | -.0809 | -.0536 |       |
| 165.000 |        |       |       |       |        |        |       |        |         |         |        |        |        |        |       |
| 169.000 |        |       |       |       |        |        |       |        |         |         |        |        |        |        |       |
| 174.000 |        |       |       |       |        |        |       |        |         |         |        |        |        |        |       |
| 180.000 | 1.0652 | .4419 | .2358 | .1842 | .1252  | .1651  | .5904 | .3282  | -.14686 | -.2678  | -.1427 | -.0721 | -.0489 |        |       |

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|
| PHI     |        |        |        |        |        |        |        |       |        |        |
| 40.000  | .0362  | .0113  | -.0387 | -.0913 | -.0758 | -.0851 | .0007  |       | .2830  | .0118  |
| 70.000  | -.0296 | -.0202 | -.0202 | -.0650 | -.0717 | -.0696 | -.0381 |       | .2091  | -.0125 |
| 90.000  | -.2324 | -.2324 | -.1072 | .1475  | -.1324 | -.1433 | -.1623 |       |        |        |
| 105.000 | -.1776 | -.1534 | -.0305 | .0971  | -.1747 | -.1825 | -.2003 |       |        |        |
| 110.000 |        |        | .0376  | .1917  | -.2455 | -.2207 | -.2497 |       |        |        |
| 120.000 | -.1535 | -.0593 | .1575  | .2340  | -.2778 | -.2208 | -.2208 |       |        |        |
| 135.000 |        |        | .2173  | .2976  | -.2299 | -.1414 | -.1944 |       |        |        |
| 150.000 | -.0624 | .0223  | .2131  | .2118  | -.1843 | -.0981 | -.1172 |       |        |        |

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TABULATED PRESSURE DATA - 0A148 (AMES 11-073-1)

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8842)

ALPHA (3) = 3.969 BETA (2) = -3.860

## SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE C<sub>3</sub>

| X/LB    | .6520  | .7290 | .7790 | .8210 | .8790 | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|--------|-------|-------|-------|-------|--------|--------|-------|--------|--------|
| PHI     |        |       |       |       |       |        |        |       |        |        |
| 165.000 | -.0486 | .1852 |       |       | .0274 | -.0911 | -.3010 |       |        |        |
| 180.000 | -.0511 | .0330 | .1727 | .2818 |       |        |        |       |        |        |

ALPHA (3) = 4.049 BETA (3) = .193 MACH = .59674 Q = 594.79 P = 2386.0 RN/L = 4.8833

## SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE C<sub>3</sub>

| X/LB    | .0000  | .0080 | .0230 | .0460 | .0700  | .1120  | .1530 | .1660  | .1770  | .2040  | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|--------|-------|-------|-------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| PHI     |        |       |       |       |        |        |       |        |        |        |        |        |        |        |       |
| 20.000  | 1.0723 | .5332 | .1284 | .0403 | -.0229 | -.0684 |       | -.0618 | -.0545 | -.0437 | -.0182 | .0134  | .0466  | .0531  |       |
| 40.000  |        |       | .1458 | .0468 | -.0323 | -.0684 |       | -.0694 | -.0676 | -.0505 | .0004  | .0193  | .0354  | .0737  |       |
| 55.000  |        |       | .2417 | .0683 | -.0056 | -.0345 |       | -.0691 | -.0659 | -.0505 | .0004  | .0193  | .0354  | .0737  |       |
| 70.000  |        |       | .2885 | .1188 | .0484  | -.0156 |       | -.0909 | -.0876 | -.0505 | .0004  | .0193  | .0354  | .0737  |       |
| 90.000  |        | .4158 | .2935 | .1197 | .0397  | -.0009 |       | -.1141 | -.0700 | -.0290 | -.1167 | -.0648 | -.0394 | -.0428 |       |
| 120.000 |        |       | .3038 | .1268 | .0501  | .0045  |       | -.1262 | -.0300 | -.2522 | -.1332 | -.0627 | -.0428 | -.0650 |       |
| 140.000 |        |       | .3110 | .1728 | .0861  | .1059  |       | -.0241 | -.0646 | -.3217 | -.2578 | -.0871 | -.0650 | -.0394 |       |
| 150.000 |        |       | .2813 | .1941 | .1136  | .1516  |       | .3302  | -.0554 | -.0545 | -.0182 | .0134  | .0466  | .0531  |       |
| 162.000 |        |       |       |       |        |        |       |        | -.0416 | -.0545 | -.0182 | .0134  | .0466  | .0531  |       |
| 165.000 |        |       |       |       |        |        |       |        |        | -.0545 | -.0182 | .0134  | .0466  | .0531  |       |
| 169.000 |        |       |       |       |        |        |       |        |        | -.0545 | -.0182 | .0134  | .0466  | .0531  |       |
| 174.000 |        |       |       |       |        |        |       |        |        | -.0545 | -.0182 | .0134  | .0466  | .0531  |       |
| 180.000 |        |       |       |       |        |        |       |        |        | -.0545 | -.0182 | .0134  | .0466  | .0531  |       |

X/LB

PHI

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990 | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|
| PHI     |        |        |        |        |        |        |        |       |        |        |
| 40.000  | .0370  | .0095  | -.0349 | -.0952 | -.0795 | -.0925 | -.0025 |       | .2734  | .0189  |
| 70.000  | .0296  | -.0116 | -.0116 | -.0676 | -.0742 | -.0742 | -.0437 |       | .1756  | -.0524 |
| 90.000  | -.2665 | -.2516 | -.1382 | -.0029 | -.1902 | -.1821 | -.1879 |       |        |        |
| 105.000 | -.1897 | -.1652 | -.0517 | .0188  | -.2462 | -.2263 | -.2226 |       |        |        |
| 110.000 |        |        | .0261  | .0350  | -.3237 | -.2642 | -.2734 |       |        |        |
| 120.000 |        |        | .1174  | .0282  | -.3588 | -.2881 | -.2834 |       |        |        |
| 135.000 |        |        | .1794  | .2579  | -.2837 | -.1897 | -.2248 |       |        |        |
| 150.000 |        | -.0391 | .0284  | .3604  | -.2199 | -.1566 | -.1545 |       |        |        |
| 165.000 |        | -.0282 | .1739  | .3937  | -.0722 | -.1702 | -.3046 |       |        |        |
| 180.000 |        | -.0334 | .0395  |        |        |        |        |       |        |        |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-07310A148) -140A/B/C/R ORB FUSELAGE

(24883X)

|               |       |              |       |      |   |        |   |   |        |   |   |        |      |   |        |
|---------------|-------|--------------|-------|------|---|--------|---|---|--------|---|---|--------|------|---|--------|
| ALPHA ( 3 ) = | 3.947 | BETA ( 4 ) = | 4.242 | MACH | = | .59674 | Q | = | 594.79 | P | = | 2386.0 | RM/L | = | 4.8833 |
|---------------|-------|--------------|-------|------|---|--------|---|---|--------|---|---|--------|------|---|--------|

## SECTION 11 ORBITER FUSELAGE

DEPENDENT VARIABLE CP

[illegible][illegible]

|        | PHI | .000 | .050  | .1082 | .0294  | -.0402 | -.0726 | -.0682 | -.0454 | -.0215 | .0104 | .0402 | .0454 |
|--------|-----|------|-------|-------|--------|--------|--------|--------|--------|--------|-------|-------|-------|
| 20.000 |     | .000 | .1019 | .1016 | -.0585 | -.0793 | -.0826 | -.0841 |        |        |       |       |       |
| 40.000 |     | .000 | .1523 | .0159 | -.0490 | -.0676 | -.0932 | -.1087 | -.0771 | -.0271 | .0042 | .0189 | .0732 |

[illegible][illegible][illegible]

| Year | 1960   | 1961   | 1962   | 1963   | 1964   | 1965   | 1966   | 1967   | 1968   | 1969   | 1970   | 1971   | 1972   | 1973   | 1974   | 1975   | 1976   | 1977   | 1978   | 1979   | 1980   | 1981   | 1982   | 1983   | 1984   | 1985   | 1986   | 1987   | 1988   | 1989   | 1990   | 1991   | 1992   | 1993   | 1994   | 1995   | 1996   | 1997   | 1998   | 1999   | 2000   | 2001   | 2002   | 2003   | 2004   | 2005   | 2006   | 2007   | 2008   | 2009   | 2010   | 2011   | 2012   | 2013   | 2014   | 2015   | 2016   | 2017   | 2018   | 2019   | 2020   | 2021   | 2022   | 2023   | 2024   | 2025   | 2026   | 2027   | 2028   | 2029   | 2030   | 2031   | 2032   | 2033   | 2034   | 2035   | 2036   | 2037   | 2038   | 2039   | 2040   | 2041   | 2042   | 2043   | 2044   | 2045   | 2046   | 2047   | 2048   | 2049   | 2050   | 2051   | 2052   | 2053   | 2054   | 2055   | 2056   | 2057   | 2058   | 2059   | 2060   | 2061   | 2062   | 2063   | 2064   | 2065   | 2066   | 2067   | 2068   | 2069   | 2070   | 2071   | 2072   | 2073   | 2074   | 2075   | 2076   | 2077   | 2078   | 2079   | 2080   | 2081   | 2082   | 2083   | 2084   | 2085   | 2086   | 2087   | 2088   | 2089   | 2090   | 2091   | 2092   | 2093   | 2094   | 2095   | 2096   | 2097   | 2098   | 2099   | 2100   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |   |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---|
| 1960 | 1.0000 | 1.0013 | 1.0026 | 1.0039 | 1.0052 | 1.0064 | 1.0077 | 1.0089 | 1.0101 | 1.0113 | 1.0125 | 1.0137 | 1.0148 | 1.0159 | 1.0170 | 1.0181 | 1.0192 | 1.0203 | 1.0214 | 1.0225 | 1.0235 | 1.0246 | 1.0256 | 1.0267 | 1.0277 | 1.0287 | 1.0297 | 1.0307 | 1.0317 | 1.0327 | 1.0337 | 1.0347 | 1.0357 | 1.0367 | 1.0377 | 1.0387 | 1.0397 | 1.0407 | 1.0417 | 1.0427 | 1.0437 | 1.0447 | 1.0457 | 1.0467 | 1.0477 | 1.0487 | 1.0497 | 1.0507 | 1.0517 | 1.0527 | 1.0537 | 1.0547 | 1.0557 | 1.0567 | 1.0577 | 1.0587 | 1.0597 | 1.0607 | 1.0617 | 1.0627 | 1.0637 | 1.0647 | 1.0657 | 1.0667 | 1.0677 | 1.0687 | 1.0697 | 1.0707 | 1.0717 | 1.0727 | 1.0737 | 1.0747 | 1.0757 | 1.0767 | 1.0777 | 1.0787 | 1.0797 | 1.0807 | 1.0817 | 1.0827 | 1.0837 | 1.0847 | 1.0857 | 1.0867 | 1.0877 | 1.0887 | 1.0897 | 1.0907 | 1.0917 | 1.0927 | 1.0937 | 1.0947 | 1.0957 | 1.0967 | 1.0977 | 1.0987 | 1.0997 | 1.1007 | 1.1017 | 1.1027 | 1.1037 | 1.1047 | 1.1057 | 1.1067 | 1.1077 | 1.1087 | 1.1097 | 1.1107 | 1.1117 | 1.1127 | 1.1137 | 1.1147 | 1.1157 | 1.1167 | 1.1177 | 1.1187 | 1.1197 | 1.1207 | 1.1217 | 1.1227 | 1.1237 | 1.1247 | 1.1257 | 1.1267 | 1.1277 | 1.1287 | 1.1297 | 1.1307 | 1.1317 | 1.1327 | 1.1337 | 1.1347 | 1.1357 | 1.1367 | 1.1377 | 1.1387 | 1.1397 | 1.1407 | 1.1417 | 1.1427 | 1.1437 | 1.1447 | 1.1457 | 1.1467 | 1.1477 | 1.1487 | 1.1497 | 1.1507 | 1.1517 | 1.1527 | 1.1537 | 1.1547 | 1.1557 | 1.1567 | 1.1577 | 1.1587 | 1.1597 | 1.1607 | 1.1617 | 1.1627 | 1.1637 | 1.1647 | 1.1657 | 1.1667 | 1.1677 | 1.1687 | 1.1697 | 1.1707 | 1.1717 | 1.1727 | 1.1737 | 1.1747 | 1.1757 | 1.1767 | 1.1777 | 1.1787 | 1.1797 | 1.1807 | 1.1817 | 1.1827 | 1.1837 | 1.1847 | 1.1857 | 1.1867 | 1.1877 | 1.1887 | 1.1897 | 1.1907 | 1.1917 | 1.1927 | 1.1937 | 1.1947 | 1.1957 | 1.1967 | 1.1977 | 1.1987 | 1.1997 | 1.2007 | 1.2017 | 1.2027 | 1.2037 | 1.2047 | 1.2057 | 1.2067 | 1.2077 | 1.2087 | 1.2097 | 1.2107 | 1.2117 | 1.2127 | 1.2137 | 1.2147 | 1.2157 | 1.2167 | 1.2177 | 1.2187 | 1.2197 | 1.2207 | 1.2217 | 1.2227 | 1 |

|        |        |        |        |        |        |        |        |       |        |
|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|
| PHI    | .000   | .0123  | -.0361 | -.0952 | -.0806 | -.0934 | -.0061 | .2758 | .0082  |
|        | .0326  |        | -.0164 | -.0553 | -.0779 | -.0777 | -.0429 | .1516 | -.0759 |
| 40.000 | .0390  |        |        | -.0602 | 1.2362 | -.2302 | -.2338 |       |        |
| 70.000 | -.2718 | -.2714 | -.1685 | -.0531 | 1.3720 | -.2641 | -.2570 |       |        |
| 90.000 | -.1894 | -.1857 | -.0925 |        |        |        |        |       |        |

[illegible]

|         |   |      |       |       |        |        |        |
|---------|---|------|-------|-------|--------|--------|--------|
| 150.000 | - | 0.04 | .1227 | .2650 | -.3830 | -.6303 | -.1958 |
| 155.000 | - | 0.15 | .1626 | .1684 | -.1684 | -.2473 | -.3281 |
| 160.000 | - | 0.26 | .1781 | .3172 |        |        |        |

ALPHA ( 3) = 3.985 BETA ( 5) = 8.292 MACH = .59674 Q = 594.79 P = 2385.0 RV/L = 4.6833

SECTION ( 110)BITER FUSELAGE

DEPENDENT VARIABLE CP

|      | 0.000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| X/LB |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| PHI  | 0000  | 4018  | 0001  | 0143  | 0515  |       |       | 0050  |       | 0015  | 0630  | 0375  | 0048  | 0205  | 0320  |

| Variable       | Mean  | Standard deviation | Skewness | Kurtosis | Normality test |
|----------------|-------|--------------------|----------|----------|----------------|
| Age            | 48.18 | 9.551              | 0.003    | 20.000   | 0.999          |
| Gender         | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Marital status | 0.590 | 0.486              | -0.048   | 0.590    | 0.999          |
| Education      | 0.559 | 0.499              | -0.114   | 0.599    | 0.999          |
| Income         | 0.75  | 0.418              | -0.173   | 0.590    | 0.999          |
| Health         | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Religion       | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Occupation     | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Residence      | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Travel         | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Work           | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Family         | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Life           | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Health         | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Religion       | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Occupation     | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Residence      | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Travel         | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Work           | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Family         | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Life           | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Health         | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Religion       | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Occupation     | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Residence      | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Travel         | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Work           | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Family         | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Life           | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Health         | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Religion       | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Occupation     | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Residence      | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Travel         | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Work           | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Family         | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Life           | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Health         | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Religion       | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Occupation     | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Residence      | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Travel         | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Work           | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Family         | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Life           | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Health         | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Religion       | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Occupation     | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Residence      | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Travel         | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Work           | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Family         | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Life           | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Health         | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Religion       | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Occupation     | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Residence      | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |
| Travel         | 0.547 | 0.493              | -0.043   | 0.590    | 0.999          |

|         |       |        |        |         |         |         |         |         |         |         |
|---------|-------|--------|--------|---------|---------|---------|---------|---------|---------|---------|
| 100.000 | 1072  | -0.135 | -0.027 | -0.0568 | -0.2347 | -0.5098 | -0.3592 | -0.2455 | -0.0557 | -0.0405 |
| 90.000  | 0.676 | -0.073 | -0.019 | -0.1338 | -0.2591 | -0.4095 | -0.2962 | -0.1449 | -0.0632 | -0.0356 |
| 80.000  |       | 0.073  | 0.019  | -0.1338 | -0.2591 | -0.4095 | -0.2962 | -0.1449 | -0.0632 | -0.0356 |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XEB842)

ALPHA ( 3 ) = 3.985 BETA ( 5 ) = 8.292

SECTION ( 1 ) ORBITER FUSELAGE DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4970 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       | .1416 | .0757 | .0011 | .0235 |       | .0948 |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 152.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 155.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 159.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

.2771

.4453

.2650

.9990

1.0180

1.0460

PHI

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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(XEBB42)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

ALPHA ( 4 ) = 8.038 BETA ( 3 ) = .180

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 -.0729 .1418  
180.000 -.0713 .0056 .1471 .4037  
- .1084 - .1893 - .3006

ALPHA ( 4 ) = 8.035 BETA ( 4 ) = 4.244 MACH = .59544 O = 594.20 P = 2386.1 RN/L = 4.8802

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 1.0114 .6641 .2545 .1379 .0571  
20.000 .2371 .1200 .0287 - .0083  
40.000 .2397 .0941 .0232 - .0178  
55.000 .1944 .0412 - .0202 - .0798  
70.000 .1598 .0190 - .0493 - .0613  
90.000 .1564 .0116 - .0391 - .0627  
120.000 .1473 .0337 - .0396 .0117  
140.000 .1255 .0685 - .0002 .0496  
150.000  
151.000  
162.000  
165.000  
169.000  
174.000  
180.000- .0092  
- .0303  
- .0604  
- .1507  
- .1659  
- .1792  
- .1123  
- .1974  
- .2041  
- .2034.0139 -.0026 .0166 .0588 .0929 .1058  
-.0387  
-.0939 -.0788 -.0220 .0178 .0457 .1222  
-.2055  
-.2522 -.2837 -.1759 -.1268 -.1076  
-.3503 -.2919 -.1765 -.1071 -.0944  
-.4517 -.3597 -.2716 -.1007 -.0880  
-.5586  
-.7456 -.3620 -.1512 -.0666 -.0561

.2948

-1.3008 -.2909 -.1503 -.0706 -.0354

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

.0990 .0738 .0250 -.0504 -.0433 -.0717 .0081  
1080 .0392 .0392 -.0143 -.0445 -.0582 -.0245  
13853 -.3472 -.0800 -.0800 -.2503 -.2398 -.2334  
160.000 -.2855 -.2495 -.0824 -.3237 -.2784 -.2609  
165.000 -.0677 .9658 -.4252 -.3221 -.3168  
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1000.000.4230  
-.3242.3040 .0192  
.1770 -.0608

-1.5040 -.2885 -.1495 -.0803 -.0708



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TABULATED PRESSURE DATA - 0A143 ( AMES 11-073-1 )

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(XEBB2)

ALPHA ( 5 ) = 11.910 BETA ( 1 ) = -7.853

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4870 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

X/LB

PHI

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4870 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

ALPHA ( 5 ) = 11.930 BETA ( 2 ) = -3.836 MACH = .59658 Q = .59443 P = .2385.8 RVL = .4.8823

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460 | .0700 | .1120 | .1580 | .1660 | .1770 | .2040 | .2510 | .3010 | .3780 | .4870 | .5740 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PHI     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 140.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 150.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 151.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 162.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 165.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 169.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 174.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.000 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

.4986

.3316

-.0943

-.5367

-.3502

-.1957

-.1182

-.1178

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

:XE8842)

ALPHA ( 5 ) = 11.930 BETA ( 2 ) = -3.836

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | 0.000  | 0.080  | 0.230  | 0.460  | 0.700  | 1.120  | 1.580  | 1.660  | 1.770   | 2.040  | 2.510  | 3.010  | 3.780  | 4.970 | 5.740 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|-------|-------|
| PHI     |        |        |        |        |        |        |        |        |         |        |        |        |        |       |       |
| 180.000 | .9496  | .1089  | -.0095 | -.0111 | -.0447 | .0333  |        | .2065  | -1.8141 | -.2864 | -.1554 | -.0849 | -.0903 |       |       |
| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180  | 1.0460 |        |        |        |       |       |
| PHI     |        |        |        |        |        |        |        |        |         |        |        |        |        |       |       |
| 40.000  | .1743  | .1418  | .0884  | .0137  | .0039  | -.0342 | .0369  |        | .3282   | .0415  |        |        |        |       |       |
| 70.000  | .2038  | .1178  | .0523  | .0326  | .0096  | -.0021 |        |        | .2273   | -.0183 |        |        |        |       |       |
| 90.000  | -.5151 | -.3886 | -.2099 | .0060  | -.1487 | -.1344 | -.1432 |        |         |        |        |        |        |       |       |
| 105.000 | -.3827 | -.2714 | -.1069 | .0610  | -.1731 | -.1680 | -.1870 |        |         |        |        |        |        |       |       |
| 110.000 |        | -.0326 | .1468  | -.2359 | -.2071 | -.2388 |        |        |         |        |        |        |        |       |       |
| 120.000 | -.3471 | -.1009 | .0533  | .1480  | -.2930 | -.2238 | -.2108 | -.3411 |         |        |        |        |        |       |       |
| 135.000 |        | .0654  | .1376  | -.2390 | -.1699 | -.2150 |        | -.2805 |         |        |        |        |        |       |       |
| 150.000 | -.2120 | -.1181 | .0348  | .2604  | -.1805 | -.1482 | -.1635 |        |         |        |        |        |        |       |       |
| 165.000 | -.1439 | .0448  |        | -.0036 | -.0946 | -.2944 |        |        |         |        |        |        |        |       |       |
| 180.000 | -.1163 | -.0392 | .1009  | .3799  |        |        |        |        |         |        |        |        |        |       |       |

ALPHA ( 5 ) = 11.966 BETA ( 3 ) = .177 MACH = .59443 P = 2389.8 RN/L = 4.8825

SECTION ( 1 ) ORBITER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | 0.000 | 0.080 | 0.230 | 0.460  | 0.730  | 1.120  | 1.580 | 1.660  | 1.770   | 2.040  | 2.510  | 3.010  | 3.780  | 4.970  | 5.740 |
|---------|-------|-------|-------|--------|--------|--------|-------|--------|---------|--------|--------|--------|--------|--------|-------|
| PHI     |       |       |       |        |        |        |       |        |         |        |        |        |        |        |       |
| 20.000  | .9591 | .8221 | .4145 | .2650  | .1783  |        |       | .0678  |         | .0601  | .0634  | .0827  | .1149  | .1694  | .1787 |
| 40.000  |       |       | .4202 | .2659  | .1653  | .0941  |       | .0626  |         | .0378  |        |        |        |        |       |
| 55.000  |       |       | .4213 | .2547  | .1669  | .0943  |       | .0450  |         | -.0124 | -.0143 | .0421  | .0860  | .1289  | .1996 |
| 70.000  |       |       | .3256 | .1985  | .0768  | -.0226 |       | -.0997 |         | -.1760 |        |        |        |        |       |
| 90.000  |       |       | .2554 | .0938  | .0118  | -.0036 |       | -.1064 |         | -.2206 | -.2837 | -.2083 | -.1623 | -.1616 |       |
| 120.000 | .2739 |       | .2082 | .0745  | .0273  | -.0091 |       | -.1165 |         | -.3051 | -.2992 | -.2095 | -.1659 | -.1560 |       |
| 140.000 |       |       | .1310 | .0161  | -.0434 | .0144  |       | -.0475 |         | -.4271 | -.4060 | -.4002 | -.2536 | -.2386 |       |
| 150.000 |       |       | .0535 | -.0007 | -.0415 | .0346  |       | .2763  |         | -.5656 | -.4369 | -.1984 | -.1047 | -.1089 |       |
| 165.000 |       |       |       |        |        |        |       |        | -.1253  |        |        |        |        |        |       |
| 180.000 |       |       |       |        |        |        |       |        | -.1624  |        |        |        |        |        |       |
| X/LB    | .9591 | .1084 | .0077 | -.0076 | -.0225 | .0457  | .4635 | .2965  | -1.4494 | -.3151 | -.1614 | -.0831 |        | -.0540 |       |
| PHI     |       |       |       |        |        |        |       |        |         |        |        |        |        |        |       |
| 40.000  | .1780 | .1441 | .0938 | .0165  | .0104  | -.0294 | .0426 | .2567  | -1.6872 | -.2853 | -.1415 | -.0741 | -.0681 |        |       |
| 190.000 | .1977 | .1165 | .1165 | .0422  | -.0006 | -.0141 | .0016 | .9990  | 1.0180  | 1.0460 |        |        |        |        |       |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-07310A148) -140A/B/C/R ORB FUSELAGE

(XE8842)

ALPHA ( 5 ) = 11.966 BETA ( 3 ) = .177

SECTION ( 1 ) ORBITTER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .6520  | .7290  | .7790  | .8210  | .8790  | .9210  | .9600  | .9990  | 1.0180 | 1.0460 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| PHI     |        |        |        |        |        |        |        |        |        |        |
| 70.000  | -.5426 | -.4257 | -.2407 | -.0675 | -.2267 | -.2047 | -.1889 |        |        |        |
| 90.000  | -.3953 | -.3095 | -.1421 | -.0244 | -.2712 | -.2269 | -.2204 |        |        |        |
| 105.000 |        |        | -.0331 | .0259  | -.3513 | -.2744 | -.2764 |        |        |        |
| 110.000 |        |        |        |        |        |        |        | -.3696 |        |        |
| 120.000 | -.2347 | -.1343 | .0285  | .1141  | -.3501 | -.2790 | -.2616 | -.2859 |        |        |
| 135.000 |        |        | .0232  | .2604  | -.3301 | -.2256 | -.2339 |        |        |        |
| 150.000 | -.1599 | -.0897 | .1076  | .4857  | -.2778 | -.1886 | -.1649 |        |        |        |
| 165.000 | -.1068 |        | .1287  |        | -.1269 | -.2050 | -.3062 |        |        |        |
| 180.000 | -.1028 | -.0138 | .1414  | .4219  |        |        |        |        |        |        |

ALPHA ( 5 ) = 11.976 BETA ( 4 ) = 4.252 MACH = .59658 Q = 594.43 P = 2395.8 RN/L = 4.8825

SECTION ( 1 ) ORBITTER FUSELAGE

DEPENDENT VARIABLE CP

| X/LB    | .0000 | .0080 | .0230 | .0460  | .0700  | .1120  | .1580 | .1660  | .1770  | .2040    | .2510  | .3010  | .3780  | .4970  | .5740 |
|---------|-------|-------|-------|--------|--------|--------|-------|--------|--------|----------|--------|--------|--------|--------|-------|
| PHI     |       |       |       |        |        |        |       |        |        |          |        |        |        |        |       |
| .000    |       |       | .3925 | .2523  | .1604  |        |       | .0553  | .0471  | .0526    | .0731  | .1150  | .1501  | .1758  |       |
| 20.000  | .9428 | .7956 | .3626 | .2267  | .1255  | .0673  |       | .0318  | .0058  |          |        |        |        |        |       |
| 40.000  |       |       | .3022 | .1654  | .0749  | .0150  |       | -.0292 | -.0839 | -.1030   | -.0317 | .0330  | .0847  | .1754  |       |
| 55.000  |       |       | .1841 | .0404  | -.0401 | -.1216 |       | -.1896 | -.2410 |          |        |        |        |        |       |
| 70.000  |       |       | .1321 | -.0035 | -.0738 | -.0722 |       | -.1696 | -.2656 | -.3126   | -.2331 | -.1641 | -.1902 |        |       |
| 90.000  | .1206 |       | .1058 | -.0143 | -.0534 | -.0677 |       | -.1786 | -.3541 | -.3170   | -.2158 | -.1677 | -.1605 |        |       |
| 120.000 |       |       | .0686 | -.0287 | -.0886 | -.0131 |       | -.1112 | -.4761 | -.3872   | -.3272 | -.1675 | -.1403 |        |       |
| 140.000 |       |       |       |        |        |        |       |        | -.6033 |          |        |        |        |        |       |
| 150.000 |       |       | .0223 | -.0116 | -.0724 | .0095  |       | .1684  | -.8070 | -.3818   | -.1573 | -.0786 | -.0894 |        |       |
| 151.000 |       |       |       |        |        |        |       |        | -.2347 |          |        |        |        |        |       |
| 167.000 |       |       |       |        |        |        |       |        | -.2530 |          |        |        |        |        |       |
| 169.000 |       |       |       |        |        |        |       |        |        | -.1.3897 | -.2957 | -.1495 | -.0703 | -.0768 |       |
| 174.000 | .9428 | .0804 | .0166 | -.0147 | -.0448 | .0363  | .4131 | .2468  |        |          |        |        |        |        |       |
| 180.000 | .6520 | .7290 | .7790 | .8210  | .8790  | .9210  | .9600 | .9990  | 1.0180 | 1.0460   |        |        |        |        |       |

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

|         |        |        |        |        |        |        |        |        |  |  |  |  |  |  |  |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--|--|--|--|--|--|--|
| .000    |        |        | .0888  | .0137  | .0057  | -.0362 | .0390  |        |  |  |  |  |  |  |  |
| 40.000  | .1730  | .1445  | .1059  | .0464  | -.0108 | -.0323 | -.0012 |        |  |  |  |  |  |  |  |
| 70.000  | -.5258 | -.4422 | -.2750 | -.1330 | -.2840 | -.2634 | -.2379 |        |  |  |  |  |  |  |  |
| 90.000  | -.3916 | -.3319 | -.1916 | -.1401 | -.3500 | -.2797 | -.2584 |        |  |  |  |  |  |  |  |
| 105.000 |        |        | -.1224 | -.1040 | -.4642 | -.3475 | -.3295 |        |  |  |  |  |  |  |  |
| 110.000 |        |        |        |        |        |        |        | -.4359 |  |  |  |  |  |  |  |
| 120.000 | -.2211 | -.1891 | -.0920 | -.0492 | -.4793 | -.3678 | -.3403 |        |  |  |  |  |  |  |  |
| 135.000 |        |        | .0593  | .3483  | -.3862 | -.2615 | -.2522 |        |  |  |  |  |  |  |  |
| 150.000 | -.1110 | -.0567 | .1213  | .4268  | -.3763 | -.2671 | -.2057 |        |  |  |  |  |  |  |  |

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TABULATED PRESSURE DATA - 0A148 ( AMES 11-073-1 )

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AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(XE8842)

ALPHA ( 5 ) = 11.976 BETA ( 4 ) = 4.252

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CR

X/LB .6520 .7290 .7790 .8210 .8790 .9210 .9600 .9990 1.0180 1.0460

PHI

165.000 -.0965 .1098  
180.000 -.1257 -.0441 .0978 .3969

ALPHA ( 5 ) = 12.034 BETA ( 5 ) = 8.318 MACH = .59658 Q = 594.43 P = 2385.8 RN/L = 4.8823

## SECTION ( 1 ) ORBITER FUSELAGE

## DEPENDENT VARIABLE CP

X/LB .0000 .0080 .0230 .0460 .0700 .1120 .1580 .1660 .1770 .2040 .2510 .3010 .3780 .4970 .5740

PHI

.000 .8808 .7597 .3685 .2377 .1440 .0308 .0500 .0444 .0436 .0989 .1481 .1606  
20.000 .2936 .1760 .0314 .0308 .0027 -.0292  
40.000 .1699 .0553 -.0138 -.0720 -.1125 -.1921  
55.000 .0252 -.1018 .1557 .2250 .2665 -.3210  
70.000 -.0055 -.1089 .1609 .1386 .2247 -.3152  
90.000 -.0010 .1084 .1362 .1251 .2257 -.3993  
110.000 -.0151 -.0978 .1459 .0677 .1682 -.5221  
140.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
150.000 -.0332 -.0591 -.1148 -.0430 .0585  
162.000 .1843  
165.000 .3402  
169.000 .1440  
180.000 .9990 1.0180 1.0460

X/LB

PHI

.000 .1601 .1377 .0854 .0076 .0079 -.0351 .0333 .3263 .0396  
40.000 .1552 .0970 .0399 -.0113 -.0319 -.0033 .1801 -.0520  
70.000 -.5243 -.4608 -.3141 -.2003 -.3217 -.2886 -.2452  
90.000 -.3999 -.3752 -.2672 -.2133 -.3977 -.3134 -.2615  
105.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
110.000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000 .0000  
120.000 -.2467 -.2654 -.1567 .0193 -.6120 .4711 -.4081  
135.000 .0234 .4923 .5344 .3664 .3323  
150.000 -.1212 -.0836 .0406 .3945 .5212 .3812 .2786  
165.000 .1570 .0090 .0090 .4631 .3960 .3234  
180.000 .1932 .1359 .0144 .1801